

Thursday, July 14, 1983

Temporary staff Bill is diluted

by John Riley

THE controversial Euro-Bill on temporary workers which is bitterly opposed by the UK computer services industry was watered down in the European Parliament in Strasbourg last week.

The scrapped clause included proposals that contract work should be limited to three months; that companies reveal to their permanent staff the qualifications and rates of pay of temporary staff, as well as the fees paid to contract agencies; and that agencies should be forbidden to charge a transfer fee or the contract worker takes on a permanent job with the client.

Another controversial clause, that temporary staff should be paid the same as permanent staff, was amended so that their remuneration must be "at least equal" to that of permanent staff, allowing higher rates of pay.

All contract agencies must be authorised by the relevant bodies in each country and if contract

agencies are not registered and go out of business, then the client company incurs joint and several liability for the wages and so on of the temporary worker. The original proposal demanded secondary liability.

In a preliminary comment, Lea Clark, UK sales manager of Knight Programming Support and the Computer Services Association representative on a committee set up to oppose the EEC legislation, said: "Most of the sting seems to have been taken out of it, but the implications of social benefits need to be evaluated."

The Confederation of British Industry opposes the whole legislation in principle and objects to the clause that details of temporary work must be defined in writing.

A formal comment by the CBI also opposes the use of the word remuneration as it "could cover a number of items such as non-con contributory pension arrangements, interest free loans and increments to long service which it would be unrealistic to extend to temporary workers."

Atari replaces its chairman

by Robert Parry and Kevin Cahill

ALLING video game and micro builder Atari has replaced its chairman and chief executive of five years, Raymond Kassar. James Morgan, from cigarette maker Philip Morris, will take over from Kassar, who has resigned his post but remains with Atari as a consultant.

Atari, a subsidiary of Warner Communications, is bidding to regain its position at the top of the consumer electronics tree. It reported an operating loss of \$46 million for the first quarter of this year, with a larger second quarter loss expected, and is laying off employees by the thousand while moving manufacture to the Far East.

As well as the personal computer market, which Atari is attacking at all levels up to 16-bit with

IBM PC look-alikes, the company is planning to move into the telecommunications line with a range of computer-based phones to be introduced under the Atari badge.

The US Securities and Exchange Commission added to Kassar's troubles last December when it launched an investigation into alleged insider trading by Kassar and others. The investigation continues, but it is said to have no bearing on Kassar's resignation.

Meanwhile, at arch-rival Commodore, there is also change at the top. In the words of the US press, Jack Tramiel, the ebullient president of Commodore International, has taken over "again".

Tramiel, who is founder and chief executive officer of Commodore International which is based in Bermuda, hired Bob Lane as president of Commodore's North American operations just seven

months ago.

Three weeks ago Lane left the company, following a long line of short stay senior executives.

The company described Lane's tenure as a trial period which did not work out. Lane came to Commodore from Northern Telecoms. He was not available for comment.

Commodore has reported rapidly rising sales for the first two quarters of this year, based on a major expansion in North America, which has not heft its traditional key market.

The rise in sales comes in the wake of a rapid expansion in North American manufacturing capacity, alongside a \$6 million plus advertising campaign.

Commodore has so far shown no signs of suffering from the price attrition in the lower end of the market which has hit Atari and Texas Instruments.

Weinstock criticises private BT plan

GBC CHAIRMAN Lord Weinstock last week publicly criticised the government's plan to sell 51% of British Telecom into private hands. His comments have added fuel to the Post Office Engineering Union's campaign against the sale.

"I am not clear what point there is in privatising a company which is by its nature a monopoly," Lord Weinstock said. "I don't see how you can have anything other than a monopoly running a national communication service."

He added that if the government was determined to go ahead, BT's monopoly should be reduced as far as possible - although he pointed

out that the Bill now before Parliament did not allow for this.

Lord Weinstock also called indirectly for a buy-British policy. Questioned on the government's business he said: "We've bought over twice as much from the UK as from the rest of the world."

He added that if the government was determined to go ahead, BT's monopoly should be reduced as far as possible - although he pointed

out that the Bill now before Parliament did not allow for this.

This comment comes in the wake of reports that BT is talking to US giants IBM and American Telephone and Telegraph about the sale of US communications



OAKLEY... Warns British to beware of poachers.

Academics are selling souls abroad — Oakley

by George Black

SOME British academic researchers are selling their souls to foreign firms, according to Brian Oakley, director of the Avey programme.

Oakley, who is in charge of the official five-year national computer plan, was speaking at a conference on collaboration between higher education and industry. The conference was organised by the Institute of Manpower Studies in conjunction with the Times Higher Educational Supplement and the London Business School.

Oakley warned British firms to beware of foreign rivals "pinching our technology from the very mouths of the academics".

The answer to the problem lay in the hands of UK industry, he said. It was causing British firms to take the academic world that hit more seriously.

"There is nothing like financial hunger in the academic world to stimulate co-operation with industry."

The drain of discoveries and inventions to foreign firms was a threat the country ought to take

seriously, Oakley urged.

Oakley, who was appointed head of the £350 million project by Industry Secretary Patrick Jenkin before the general election, was secretary to the Science and Engineering Research Council.

The fifth-generation scheme to

marshal private and public organisations in an effort to combat American, Japanese and French competitors is being funded half by industry and half by the industry, defence and education departments, but is said to have no bearing on Kassar's resignation.

Meanwhile, at arch-rival Commodo, there is also change at the top. In the words of the US press, Jack Tramiel, the ebullient president of Commodo International, has taken over "again".

Tramiel, who is founder and chief executive officer of Commodo International which is based in Bermuda, hired Bob Lane as president of Commodo's North American operations just seven

GEC takes a shine to Torch

by John Kavanagh
Torch Computer has been taken over by GEC in a move which solves the young UK firm's problems and brings the GEC into the UK business microcomputer market.

The £32.5 million deal in GEC 76% of Torch. Tony Martin Vileland-Boddy, the chairman, and Peter Harris, managing director, have their shares halved to 25%.

GEC has bought out the two backers, the Bermuda-based Newmarket, which had put £80,000 and owned 35% of Welsh Development Agency, which put in £220,000 and provided a factory, and venture capital Nominex.

GEC's move sees Torch face

a cash crisis which would

take it back to these backers

another £1 million.

GEC is known to be looking

at investments on which to spend

massive reserves of over £11

million. Interest on this cash is

£178 million per year.

Torch was up 11% in

£5.460 million.

"We were vehement that

it should not be foreign-owned," said Torch chairman Vileland-Boddy. "We've turned down several foreign offers of buyout cheques."

He said that with the new buyout, Torch was aiming at a turnover of £12 million in 1983-84, compared with £3 million in the first eight months of trading, which would be about £3 million.

Part of Torch's cash problem

came from allegedly faulty

drives from the US manufacturer Tandon. Torch is suing Tandon for \$10 million.

The pressure has been put on many academic institutes to find alternative sources of income since the cuts in their grants in 1981.

The take-up on the scheme had

so far amounted to about £3 million,

and this was what had led the

CSA and the NCC to reconvene

talks with the government with a

view to establishing what the pros

pects were for further funding.

So far the government had not

committed itself, but had given

clear indications through officials

of the DoT that more money

would be forthcoming, if the

scheme was successful.

The object of the scheme,

according to Else, is to provide

direct, non-recoverable financial

grants to companies engaged in

the manufacture and marketing of

software products.

This is in the form of an outright

grant of 33 1/3% of the development

and marketing costs of a project,

from the time of approval of the

project to the end of the two year

period within the project must

normally be completed.

The scheme was begun in 1973,

but was little used or known until

1981, when the government in-

creased funding to £1.5 million.

By the following year that £1.5

million had been used up and after

a series of meetings between gov-

ernment officials and industry bod-

ies, the government decided to

make a block allocation of £10 mil-

lion to cover the period of 1982-

1983. That, too, is gone, and £1.5

million more, allocated this year, is

being used.

Observers feel that the dif-

ferences between America and its

allies are unlikely to be resolved

before the end of the year.

A DoT spokesman said: "The

UK has gone along with the

Americans all the time," explain-

ing that the Act was aimed only at

things such as "blueprints and

technical manuals accompanying a

piece of equipment" but con-

firmed that material covered by

the Act "could be anything, in-

cluding textbooks".

The move follows a series of top level

meetings last month at 10

Downing Street between the

Prime Minister and US Vice Presi-

dent George Bush, US Secretary of

Defense Caspar Weinberg and

other US officials.

The Prime Minister then set up

a special Cabinet sub-committee

to consider the situation.

During the US-imposed emb-

argo on equipment for the Soviet

Western gas pipeline, the

Prime Minister took a strong line

to ensure that UK equipment for

the pipeline would be delivered.

And over the past few months

UK computer companies, includ-

ing GEC, Ferranti, Marconi and

Plessey have been having discus-

sions with the DoT over US

threats to stop delivery of some

components which the compa-

nies use in systems which could be

and have been sold to Eastern

European countries.

And the Amcodyne ARAPAHOE 7110 from LEGEND

The first Fixed/Exchangeable 80 Mbyte +

"Whitney" technology disk drive-

now available in the UK.

60 Mbytes TOTAL STORAGE.

Regretful Prime pins hopes on new mini

by John Riley
US MINICOMPUTER manufacturer Prime launched its new flagship 32-bit supermini last week as it confessed to a failure to meet its sales targets.

And it is slashing prices on its existing superminis by up to 20%.

The new 9950 model offers, according to Prime, 50% more processing performance than the previous top end 850 machine at 10% more of the cost.

It is based on Prime's Primos operating system and supports up to 128 point-to-point terminals. The full configuration of 16 Mbytes main memory is contained on eight two Mbyte soft interleaving boards.

Architectural features include five stage synchronous pipeline with branch cache, high speed emitter coupled logic circuitry, quad precision floating point and microdiagnostics.

"The 9950 has full compatibility with the rest of the 50 range," said Prime's new UK managing director Malcolm Padina. "It will run in object code on our original Prime 300 machine. That's what we mean by compatibility."

In addition to the 9950 launch, the company also announced price reductions on its 500 by one Mbyte memory boards, and also a new intelligent communications



PADINA . . . "New machine runs object code on original 300."

United's shares hold up after a week's trading

UNITED Leasing shares held up well in their first week on the Stock Exchange despite disappointing demand before trading began.

Barclays Merchant Bank and a group of sub-underwriters had been left with half the four million £1.40 shares after a disastrous offer for sale by public tender before trading began.

And when the shares hit the Stock Exchange the price dropped quickly to £1.33 many of those underwriters rushed to get rid of their shares.

But a big institutional investor started buying hundreds of thousands of shares on the first day and the price recovered to close at £1.40. The price then stayed steady through the week.

"We expected a drop to £1.20," said managing director Ashley Mitchell. "But when the big pension fund started buying in large volume others came along. There's been a lot of institutional buying. We are less attractive to the man in the street because our business is hard to understand."

Mitchell said a row between United and its former adviser, merchant bank Hill Samuel, had also hit the public tender.

The share placing raised £4.5 million to back the IBM leasing specialist's expansion in the US and Europe. Chairman Parryn Mitchell said the US operation was a "sensational" success.



HAYFORD . . . Distributed future.

LOW-COST TERMINALS

WILKES COMPUTING LTD.

CAN SUPPLY YOU WITH ATTRACTIVELY PRICED TERMINAL PRODUCTS INCLUDING A WIDE RANGE OF

DEC®-COMPATIBLES

e.g.

VISUAL 50 DEC VT52 compatible £550

NDR 8925 dual purpose matrix printers £1295

RING US ON BRISTOL 772401

WILKES COMPUTING LTD.

30 BONVILLE ROAD, BRISLINGTON TRADING ESTATE, BRISTOL BS4 5OH, TEL: 0272 772401

French Telecom receives the buck

by Jack Gee

THE French government has unloaded the financial burden of developing the computer industry off its strained national budget on to the telecommunications authority which will now pass much of the cost on to the ordinary telephone subscriber.

Although the telephone user is often identical with the taxpayer who has until now been bearing the brunt of supporting loss-making state-owned firms such as Bull and Thomson, the switch of responsibility to French Telecom was an obvious attraction to ministers looking round for a way of paying for the ambitious five year electronics plan, la filière économique.

For a start this year 3.4 billion francs (£326 million) are being siphoned off from the telephone service's profits. In a supplementary budget for the ministry 1.6 billion francs (£154 million) are being earmarked for capital investment and 1.8 billion francs (£172 million) for trade deficit in office automation.

Higher phone charges, which in recent years have risen more slowly than inflation in France, are now inevitable if French Telecom is to carry out its new task of offsetting much of France's 3.5 billion francs (£235 million) foreign trade deficit in office automation.

While the computer and office automation industries now come under the rule of Minister for Posts and Telecommunications Louis Mexandeau, the Ministry of Industry will continue to oversee the components, consumer electronics and robot industries.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from the shelter of government umbrella to the French Telecom could mean a victory for the computer industry is likely to be short lived.

Investment in France will rise by 3% according to the French statistical office. Last year electronics and computer industries accounted for 9.2 billion francs (£825 million) of France's 95 billion francs (£8.5 billion) trade deficit.

Any belief in government circles that the move from



SWINBANK . . . "Many have tried and failed."

Hytec is high and aims to get higher

By Donald Kenett
OXFORD-based Hytec Microsystems is aiming to be the top UK supplier of mainframe terminals and to crown the position with an offer on the Unlisted Securities Market within two years.

Joint managing director Chris Swinbank said: "Starting from nothing three years ago we've become number one terminal supplier in the ICL market."

"This year, we've developed and manufactured our own machine. Let's say we've consolidated the group. It's not enough just to make lots of sales, you have to develop your managers, make sure you handle your finances right — there are many things you have to consider besides having a good product."

Swinbank and his partner Chris Howe-Davies started the company in 1979 as a distributor of Z80-based CP/M microcomputers from ECS in the US. From their background in ICL mainframes, they wanted to move into micros because the market was starting to boom.

But to differentiate its product, it implemented ICL's communica-

tions protocols. By the end of 1981 it had all three — CO1, CO2 and CO3 — and claims that it is still the only company to have all three available on the same device.

"Many have tried and failed," said Swinbank. "We don't find it difficult but others seem to."

"We're expanding our profile from being a micro vendor to being in terminal sales. Now we're moving into the Honeywell market. We've been doing it for nine months, but we've sold by request rather than by any significant effort. Now that we've developed the product and got people using it, we can expand. And we're doing the same with Burroughs."

"Where we see the greatest growth is in the business system to main market. The bottom end of the mainframe market is going to go into decline and be replaced by large micros, networking and so on. The top end will be large powerful mainframes doing number crunching, large databases and batch processing. The rest of the distributed market will be the distributed market will be micros."

The company is developing a 32-bit microcomputer to expand its activities into the heavyweight end in about 18 months. It is using the National Semiconductor chip in its development work, but Swinbank says it may use any of the large number of equivalents it expects to appear by then.

"Using our experience on that side of the market we will implement mainframe-type operating systems on micros. The operating systems will be a pretty significant part of our products," he said.

"To that we will add networking. We've got networking today, but with very powerful networking — Ethernet, some other form of network, it doesn't really matter — we'll be moving towards the main market and the bottom end of the mainframe market."

"We believe that 32-bit operation is a plateau — that's as far as people are going to go. So rather than go through 16-bit in the interim we'll go straight to 32-bit. That will provide you with facilities that a small mainframe does today — number crunching, transaction processing, networking, interaction with any program running on the central machine integrating with local processing."

Swinbank was still missing in his life when he got it, and its finances would allow him to only sell to people who already have a mainframe, end users," he said. "And, in order come in for £4,000, we wouldn't go for it. We'd produce a maximum of 1,000 machines this year and do job."

The company has made its first Preluck range of 200 terminals and micros since it started in May. All of them have been sold and delivered in six weeks, Swinbank said.

This year's turnover to the end of August is ahead of the company's £3 million target, with profits running at £250,000. Last year it was £2 million, £100,000 profit and zero loss. Swinbank expects it to be £6 million with a £600,000 profit.

Howe-Davies reckons it will take the firm up to five years to produce all the small mainframe manufacturers in UK terminal market and up to 10 years to beat the IBM-computer independents.

The program, currently operating only in the US, is distinct from IBM's Value-Added Reseller (VAR) program. Under VAR, software houses and other organisations buy IBM hardware on speculation, package the hardware with software, and sell the entire system to end-users.

Under the programme, software houses and others selected in advance by IBM will assist IBM in making the sales of IBM PCs, PC-XTs, System 23, Displaywriters and System 34s, 36s and 38s.

Several dozen such vendors have already been signed up by IBM, which declined to identify the organisations. It will be IBM itself which makes the sale and remains responsible for fundamental service and support.

The program, currently operating only in the US, is distinct from IBM's Value-Added Reseller (VAR) program. Under VAR, software houses and other organisations buy IBM hardware on speculation, package the hardware with software, and sell the entire system to end-users.

can. We'll still be involved all the way though and we'll still responsible for the product once it's installed."

The SSO will assist IBM in making the sale, the spokesman emphasised.

Thus, although this programme is distinct from VAR, SSOs and big blue could wind up competing in some cases with VARs.

For years, IBM, via a very strict code of employee ethics, has attempted to restrain some of the more exuberant or potentially downright unethical activities of its sales force by headquarters review of almost all sales. Thus IBM will still retain final control and be able to review sales contracts.

ICL cuts its quarterly rents to save money

by Nuala Moran
ICL is cutting its rental by 12% per year for customers who agree to go from monthly to quarterly billing.

The company is going to bill quarterly in advance for hardware and software rentals to bring it into line with maintenance, which is already billed quarterly. This means users must find three months rental charges in one go, and the ICL Computer Users Association protested that members' cashflow would be jeopardised.

ICL agreed to the discount after talks with the users' association, chairman of the association, David Kelson of Dupont Computers said: "The negotiations undertaken give a 1% per month discount which must satisfy the fears of most of our users who objected.

The protest is not a criticism of going quarterly, it is that it will improve ICL's cashflow at the users' expense," he complained.

Only users currently on monthly billing who change to quarterly will get the discount. All new contracts being issued by ICL have quarterly invoicing, and people attracted by the discount have until

January 1984 to go over from monthly to quarterly. There is no compunction to change but Kelson said: "There is now a case which gives an opportunity for users to go quarterly without penalty."

Commenting on whether or not he thought the discount would be clawed back in price rises, Kelson said: "There is no guarantee whatsoever that prices won't rise, but by saying that quarterly billing will improve cashflow, ICL makes that possibility remote."

Recent ICL user survey showed that customer invoicing was causing problems because a proportion of bills were incorrect and difficulties arose in getting them amended. There had also been major delays between installing equipment and sending invoices.

John Kavanagh
DPCE raises a million and looks for big shot

cash and the availability of senior people," said managing director Keith Meadow. "Customers tend to be very busy and such contracts have high initial investment."

When we took the Na Giro contract it cost us £2.5 million to set up stocks of spares, paid and allocate people in the days when there was no real listing this week.

The company's shares were 3.5 times oversubscribed at the minimum asking price of £1.70 and the price was set at £2 when trading started on Monday. Even so, demand exceeded supply almost three times. The sale involved 33% of the firm's equity.

The rest of the £3.2 million raised went to the existing management and institutional backers and to convert DPCE's complex mix of loan stock and redeemable preference shares into ordinary shareholdings.

"Our growth is constrained by

in the UK at the launch of the product last week at the IBM User Show.

He said: "We think that this will be the solution to the DP manager's problems with micros. It will bring the control of computers back to the DP department."

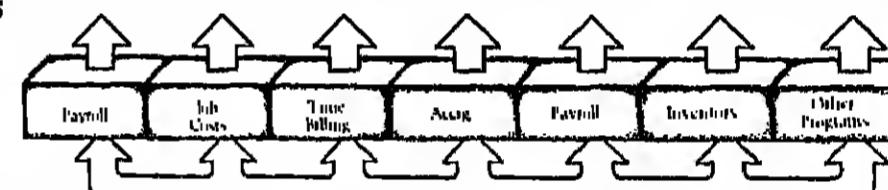
SyFAnet, announced 18 months ago, is a broadband based LAN with IBM SNA (Systems Network Architecture) compatibility. Computer Automation claims that it can connect all the major micros to a central mainframe machine. The system links any device with a RS232 interface.

Computer Automation has launched its own micro, based on the Intel 8088 chip running under CP/M-80 with a range of Winchester and floppy disk drives.

In the UK the new sales team will be split between the south, the midlands and the north and the company plans to open a regional office in Scotland within the next six months.

There you are with all that microchip potential and no software that's man enough to exploit it.

INFORMATION



amongst your most valuable information in absolute safety.

These features and more have made dBASE II a standard for microcomputer information

management. And it's a standard that's as good for the one-man business as it is for the larger company.

But don't just take our word for it. Ask any dBASE II dealer and try it out for yourself for 30 days.

You're hardly taking a risk, because if you don't like it, you'll get your money back! But before the 30 days is up you'll wonder how you ever managed without dBASE II.

So do your computer a favour. Give it a copy of dBASE II. For the name of your nearest dealer contact ASHTON-TATE distributors:

ACT (Pulsar) 021-454 8585

Arbel Ltd. (0603) 39381

Encotel Systems 01-680 6040

Ferrari Software 01-751 5791

Midlectron (Belper) 6811

Pete & Pam (0706) 227011

Soft Option 0476 860171

Software Ltd. 01-833 1173/6

Tamsys (Windsor) 56747

Tradesoft 01-627 1800

Xitan Systems (0703) 334711

dBASE II is a registered trademark of Ashton-Tate.

French suffer as IT imports rise

by Jack Gee
FRANCE's information technology industry continues to lose ground on its domestic market to foreign competition as more and more French firms equip themselves with computer systems and peripherals, a major report has revealed in Paris.

The National Association of Manufacturers of Computer Systems, Peripherals and Telematics applications says that although turnover rose by 28% last year to over 34 billion francs (\$3.1 billion) and one-third of production was exported, imports of office equipment increased by 27% and computers by 41%.

The association's report says: "The increased sales of foreign manufacturers reflects the inadequacies of our own national production in the fields of microcomputers and microsystems, peripherals and office equipment."

The report adds: "While exports have been picking up on the markets of our principal European partners where access was very difficult throughout 1982, the home market — particularly for small business customers, shows worry-

ing symptoms of running out of steam, if this situation worsened, the situation would be serious."

President Riviere told Jean Claude Hirsch, the French industry ministry's information technology chief, that the French computer industry was suffering from a shortage of engineers and technicians and the absence of a genuine policy of industrial standards.

Riviere also complained that manufacturers were uneasy because of a threat to impose new, higher rates of VAT on display screens and increasing difficulties in obtaining access to financial markets.

Hirsch replied that cash aid of various types will provide 1.3 billion francs (£120 million) to help develop new computer products and encourage the expansion of firms in the industry this year.

From the dole to a £30,000 fellowship

by George Black
THE FIRST industrial research fellowship to be granted by the Wolfson Foundation for a computer project has gone to Elizabeth Politzer.

She got a £30,000 grant for a two-year project in expert systems after being out of work for two years.

"After I got my PhD in information sciences I sent about three dozen applications, but didn't get a single interview," she said. "I seemed to have overqualified myself."

Wolfson fellowships are aimed at bringing industry and education closer and particularly at placing redundant boffins where they can be used.

She will be working in the department of management science at London's Imperial College on a project to develop a Prolog language system serving small businesses. She recently spent a week with Expert Systems of Oxford learning the language. An interim report on her progress has to be made to Wolfson in eight months.

She plans to visit artificial intelligence guru Donald Michie in Edinburgh in August as well as attending a session at Sterling University. Much of her time will be spent with British firms researching the requirements of the knowledge base.

Her supervisor, John Jenkins commented: "Expert systems packages have so far singularly failed

Microdata wins BT's personnel

by John Riley

MINICOMPUTER manufacturer Microdata Information Systems beat off the big boys to win a £6 million contract to supply British Telecom with a real time personnel system.

In all, 70 Microdata Reality minicomputers plus peripherals, together with software developed by software house Ibis will computerise British Telecom's 246,000 employee records by August 1984. Work has already begun and eight systems have already been installed.

To Jerry Causley, managing director of Microdata Information Systems, the deal vindicates his strategy of concentrating on vertical markets. "To combat IBM, ICL and the others, we have to become specialists," he said. "Personnel systems are important because they open doors. Every major company needs one and they are taking on a more significant management role in those companies."

Microdata, a subsidiary of the US giant McDonnell Douglas, specialises in personnel and library systems and local authority applications and is working on a manufacturing and control system.

The company manufactures minicomputers and peripherals in Hemel Hempstead. Causley believes that a major strength is to form exclusive long term relationships with a limited number of software houses. To that end he has already struck up such relationships with Ibis and Debensons Interactive Systems.

The British Telecom system, called Prism (personnel related information system for management), comprises three interactive files holding current personnel information. These files hold data on employees, on the organisational structure and on grade and job description. Security ensures that the information is only accessed by personnel on a need to know basis, and British Telecom says that every employee will receive an individual copy of his record.

According to British Telecom, the system will reduce clerical work and provide information rapidly as opposed to the present manual system which can take up to three weeks to produce information. "It will be managers make quick decisions about using staff most effectively," says a British Telecom spokesman.

Microdata Information Systems concentrates on replacing mainframe systems with minicomputer systems, particularly government, public bodies and big business firms — it is over £200,000 market place," says Causley, the CISI network, is the only one of its type in Europe which could rival those of General

Electric, Control Data, Tymshare and IBM in the United States.

Processing is 80% of CISI's activity and intellectual input has been its main shortcoming which chairman Nollet hopes to remedy by the partnership with Wharton.

CISI's current turnover is one billion francs (£90 million) — equal to its major competitors, SG2, GSI and CAP Gemini-Sogeti. But last year it lost £3 million (£630,000).

The deal between Wharton and CISI has annoyed France's state-owned Compagnie Generale d'Electricité which was counting on French government support for its subsidiary GSI to turn it into a leading economic forecasting firm. France's national statistical institute, INSEE is also irritated by the prospect that its own economic forecasts, which have so far been regarded as gospel by French industry and government agencies, could now face rivalry from a firm in which one of the United States, leading economists is a moving figure.

When your business grows, you can change the way you handle information without changing the information itself. You can develop your own applications or buy them in ready-made. You can even build a set of menu-driven routines and let untrained people loose

ASHTON-TATE



CAUSLEY . . . "We have to become specialists."

IBM will reward its helpers

by Howard Karten
IBM HAS launched a programme whereby independent software firms who help IBM sell and install certain hardware on speculation, package the hardware with software, and sell the entire system to end-users.

Under the programme, software houses and others selected in advance by IBM will assist IBM in marketing. IBM will be the sole distributor of the programme.

Under the new programme, IBM's national marketing division's 150 sales offices and 44 product centres will each select software and service organisations (SSOs) with proven expertise in a particular field.

Each sales office or product centre will be permitted to select one SSO in each of several industries, such as insurance, banking, petrochemicals and so on.

Sales offices will be allowed a

maximum of six such SSOs, and PCs a maximum of five.

It is only very recently that IBM has allowed non-IBM organisations to peddle iron with the IBM logo. For example, in the US, Sears, Roebuck, a large retailer, and Computerland, a retailing franchise operation, are some other computer retail operations, sell IBM systems.

COMPANY NEWS

Brokers love the Micro Focus mix

UNIVERSAL and initial caution, mixed with profits that were roughly double those anticipated, was indeed a heady brew, and the brokers loved it.

That was how Brian Reynolds, the chairman of one of the most successful computer industry companies, went public about 10 weeks ago and attracted some of the best money in the City.

Reynolds' company, Micro Focus, went public about 10 weeks ago and attracted some of the best money in the City.

That money in pursuit of the shares available has driven the value of each Micro Focus share to a recent high of £4.20, from the £7 which some brokers predict.

The basis for the optimism last week was the half yearly results, which showed Micro Focus with turnover for the half year ended May 31 at £3,608,000. The turnover for the whole of the previous year was £4.45 million.

Profits at £747,000 were slightly close to the full year, which showed £54,000.

Despite a warning from Reynolds that parts of the explanation for the very good profits were a clamp on the growth of expenditure prior to the share sale in May and a big shift in the result of sales in Reynolds' voice when he spoke of how comfortable it was to be able to run the company with money in the bank.

Despite the relief of a cash store, Reynolds warned that it would not last that long.

He said that about £1 million to £1.5 million was committed for spending before the year end.

"We will want to come back to the market (for more money) maybe by the end of the year and a rights issue."

REYNOLDS . . . Voies contains

palpable relief.



A new star is born



pulsar

16 BIT BUSINESS SOFTWARE

For more information on the new PULSAR Range clip the coupon and return to

ACT (Pulsar) Ltd
FREEPOST, Birmingham B16 1BR
or call

021-454 8585

Please send further details
on the new PULSAR Range



AVAILABLE NOW FOR SIRIUS -
IBM PC and DEC Rainbow
COMING SOON

Inmos is all set for a Dram rise

LAST year American suppliers of 64K bit Dynamic RAM

memories, the current staple memory of the microcomputer market and key product from Inmos, lost a collective \$125 million.

This year, as the recovery continues in general economic trends, demand has enabled the Japanese, who are estimated to hold about 70% of the worldwide market in 64Kbit Drams, to show prices up from \$3.50 to \$6.

This same demand will enable Inmos to follow suit, increasing production and selling its products to a range of other semiconductor manufacturers.

The biggest semiconductor giant of all, Western Electric, is also readying volume 256Kbit products to its own units.

And four major Japanese semiconductor giants, Fujitsu, Hitachi, Oki and Mitsubishi, are already supplying volume production 256Kbit chips to selected customers.

A whole array of US companies, including Motorola, Intel and National Semiconductor, are poised to deliver by the end of the year.

Safe fancies the USM

LOOK out for a new entrant to the Unlisted Securities Market as Safe Computing moves further into profit, as predicted in *Computer Weekly* a few weeks ago.

Safe, which emerged from corporate ownership by Chubb last year by way of a management buyout by chairman Philip Rule, turned in profits for the year ended March 31, 1983 of £410,367 gross, which, after tax, and other charges, comes to £279,171 net.

This compares with a loss in the previous year.

Rule also revealed the turnover of the reorganised company was respectable £2,015,389.

According to Rule, the trend

turnover growth and improved

profits had continued into the first

quarter of the current year.

This will be good news to Rule's backer, City of London investment institution United Computer and Technology Holding (UCA), which funded 21% of Rule's cut from the Chubb fold.

This compares with a loss in the

Company News is compiled by Kevin Cahill

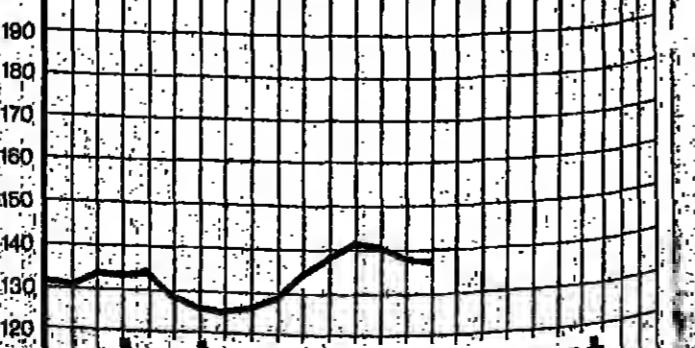
SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.

Date 17/7/83 Index 134.11 Open 10

Pence	London Stock Exchange		Pence	S		US Stock	Pence		
	Block	Price		C/gain	High				
High	Low								
1983									
643	940	Act (UK) Corp (Rep)	910	-10	28	15.7	Amidell	105	-5
182	124	Act (UK) Corp (Rep)	158	+2	158	15.7	Amidell	105	-5
327	163	ACT (UK) Corp (Rep)	124	+1	124	15.7	Amidell	105	-5
668	640	De La Rue (Rep)	558	+8	558	17	Amidell	105	-5
468	411	Perenco (Rep)	214	+27	214	21.7	Amidell	105	-5
83	41	Kalmar (UK) (Rep)	50	+10	50	21.7	Amidell	105	-5
275	258	Manx (Rep)	205	+10	205	15.7	Amidell	105	-5
250	132	Murchison (Rep)	147	+15	147	15.7	Amidell	105	-5
2800	987	North Data	260	+12	260	24	Amidell	105	-5
172712	715	Philips (UK) (Rep)	152	+12	152	15.7	Amidell	105	-5
707	425	Plaxton (Rep)	654	+12	654	15.7	Amidell	105	-5
984	418	Rank (Rep)	485	+10	485	15.7	Amidell	105	-5
220	225	Star Computers (Rep)	410	+10	410	15.7	Amidell	105	-5
558	558	Systems Data (Rep)	490	+18	490	15.7	Amidell	105	-5
177	136	U&G (UK) (Rep)	308	+10	308	15.7	Amidell	105	-5
120	118	Unilever Securities (Rep)	308	+10	308	15.7	Amidell	105	-5
130	115	CPU (UK) (Rep)	118	+10	118	15.7	Amidell	105	-5
222	145	Computer (UK) (Rep)	172	+12	172	15.7	Amidell	105	-5
54	52	Computer Tech (Rep)	178	+12	178	15.7	Amidell	105	-5
12	70	H.M.T. (Rep)	51	+10	51	15.7	Amidell	105	-5
200	205	Micro Focus (Rep)	260	+10	260	15.7	Amidell	105	-5
205	205	Micro Focus (Rep)	490	+10	490	15.7	Amidell	105	-5
200	138	Micro Focus (Rep)	195	+10	195	15.7	Amidell	105	-5
120	81	Micro Focus (Rep)	202	+10	202	15.7	Amidell	105	-5
187	110	Motorola (Rep)	180	+10	180	15.7	Amidell	105	-5
107	85	Motorola (Rep)	183	+10	183	15.7	Amidell	105	-5

The table shows the closing prices in London on Friday and in America on Thursday. The index is based on the prices of the UK companies in the table. Highs and Lows have been rounded where necessary.



4 11 18 25 2 8 16 23 30 6 13 20 27 4 11 18 25 1 8 15 22 25 12 19 89

Apr May June July Aug Sept

SOFTWARE FILE

University's ship system goes on sale

MARINE engineers at Strathclyde University are selling their Production cost package on the open market to ship and oil platform design.

The program simplifies cost

analysis for the production of

ships and other offshore construction by

assessing production costs, taking

into account design changes, wage

scales and production facilities.

Leading the way, with pro-

duction now complete,

is an ex-team of Imacon design,

working at Micron in Boise, Idaho.

Samples have already been de-

livered to various potential users,

and Micron has licensed the pro-

gram to a range of other semiconduc-

tor manufacturers.

This same demand will enable

Inmos to follow suit, increasing

production and selling its products

to a range of other semiconduc-

tor manufacturers.

BRITISH Telecom has hedged its

bets in splitting probably the

largest ever British purchase of

financial packaged software be-

tween two suppliers.

But there are some drawbacks.

A touch of the East comes to Livingston

Kevin Cahill writes about Silicon Glen's latest arrival

NEC Corporation, as well as being one of Japan's biggest computer companies, is now a significant part of the UK high tech scene.

Beginning with the opening by the Queen of a semiconductor plant in Livingston, Scotland, that is about 20% bigger than the famous plant in Wales, the company has ambitious plans for further investment, as well as for a large share of the UK micro and telecommunications market.

Talks about new plant will follow a report being made by the NEC chairman, Dr Koji Kobayashi, direct to the Prime Minister.

In the mean time to ensure that the market gets the message Kobayashi has launched the Advanced Personal Computer, an MS/DOS running 8086 based 16-bit personal micro at an entry level price of £1,950.

This price aggression marks a sharp change of marketing strategy for NEC at the lower end of the market place, a change that has come at some cost to the company.

About 18 months ago NEC introduced its best selling PC 8000 eight bit micro to the UK via the medium of an exclusive marketing deal with an English distribution company.

That deal fell apart, and whatever may have happened between NEC and its distributor, from the

outside there were three all too evident weaknesses in the operation.

The first is that the PC 8000 is neither CP/M, nor Apple compatible. The world of software which has made the PC 8000 one of Japan's best selling personal micros, and which has given NEC 45% of the Japanese personal

Perhaps it is a mark of NEC, and it's certainly a hallmark of its chairman, that the company can look failure in the face, learn from it and come back fighting

micro market, was absent in the UK.

The marketing company representing NEC then failed to develop either a large or widely distributed dealer network and, finally, the price of the PC 8000 to the potential dealer network was simply not profitable enough to attract the widespread shelf display that a successful personal computer must have.

Perhaps it is a mark of NEC, and it's certainly a hallmark of its chairman, that the company can look failure in the face, learn from it and come back fighting.

This NEC has done. The 16-bit APC is attractive, manager Mike Flashman, have forged three key deals with major shop chains.

The first deal is with the John Lewis chain, the second is with Tesco and the third is with the Steiger group.

There are three more big deals on the way and there is an interesting augur for what we are going to see in our high street stores contained in a remark by Flashman.

Answering a question about whether he thought that the high street stores had the competence to sell the APC, Flashman said that he had seldom seen so much effort, money and determination go into anything as was going into the high

ambitious mainframe startup ever attempted, that currently underway at Trilogy Corporation.

The Trilogy machine is of course IBM compatible and the Sumitomo connection has raised the question of just how involved NEC will be in the technical decisions and those about the essential marketing.

Kobayashi politely sidesteps the issue by saying that IBM compatibility is not an issue with NEC . . . "at the moment". And it is not only IBM compatibility that lurks down the road in NEC's future.

Until last October there were two supercomputer manufacturers in the world, CDC and Cray Research, both American. Suddenly last autumn, there

was a third, the Acos mainframe series was developed originally from a partnership with Honeywell, and has been sold to the development of what NEC claims is the world's fastest and largest serial processor.

The Acos mainframe series was developed originally from a partnership with Honeywell, and has been sold to the development of what NEC claims is the world's fastest and largest serial processor.

This is the Acos 1000, a huge quadri-processor, which has so far been installed in one Japanese university, and is on trial at the Gelcos bureau in the United States.

The lure of an enormous MIPS rating has ensured that there is continuing big mainframe development going on at NBC, but the Acos system lacks IBM compatibility, a major handicap at that level where almost all big machines are either IBM or IBM compatible.

This has not deterred Kobayashi, partly because the development of big machines ensures that NEC has engineers on site who have direct experience of designing the kind of mainframe architectures which will have the power and be an essential constituent of the fifth generation machines.

The Acos mainframe series was developed originally from a partnership with Honeywell, and has been sold to the development of what NEC claims is the world's fastest and largest serial processor.

This is the Acos 1000, a huge quadri-processor, which has so far been installed in one Japanese university, and is on trial at the Gelcos bureau in the United States.

The lure of an enormous MIPS rating has ensured that there is continuing big mainframe development going on at NBC, but the Acos system lacks IBM compatibility, a major handicap at that level where almost all big machines are either IBM or IBM compatible.

This has not deterred Kobayashi, partly because the development of big machines ensures that NEC has engineers on site who have direct experience of designing the kind of mainframe architectures which will have the power and be an essential constituent of the fifth generation machines.

The Acos mainframe series was developed originally from a partnership with Honeywell, and has been sold to the development of what NEC claims is the world's fastest and largest serial processor.

This is the Acos 1000, a huge quadri-processor, which has so far been installed in one Japanese university, and is on trial at the Gelcos bureau in the United States.

The lure of an enormous MIPS rating has ensured that there is continuing big mainframe development going on at NBC, but the Acos system lacks IBM compatibility, a major handicap at that level where almost all big machines are either IBM or IBM compatible.

This has not deterred Kobayashi, partly because the development of big machines ensures that NEC has engineers on site who have direct experience of designing the kind of mainframe architectures which will have the power and be an essential constituent of the fifth generation machines.

The Acos mainframe series was developed originally from a partnership with Honeywell, and has been sold to the development of what NEC claims is the world's fastest and largest serial processor.

This is the Acos 1000, a huge quadri-processor, which has so far been installed in one Japanese university, and is on trial at the Gelcos bureau in the United States.



KOBAYASHI . . . Wanted digitalisation in the 1960s.

ambitious mainframe startup ever attempted, that currently underway at Trilogy Corporation.

The Trilogy machine is of course IBM compatible and the Sumitomo connection has raised the question of just how involved NEC will be in the technical decisions and those about the essential marketing.

Kobayashi politely sidesteps the issue by saying that IBM compatibility is not an issue with NEC . . . "at the moment". And it is not only IBM compatibility that lurks down the road in NEC's future.

Until last October there were two supercomputer manufacturers in the world, CDC and Cray Research, both American. Suddenly last autumn, there

"The only place the invincible Japanese juggernaut exists is in the minds of non-American suppliers."

were six supercomputer companies, three of them Japanese, and one of those was NEC, which offered a 600 MIPS vector processor for delivery in 1985.

While the sudden appearance of the Japanese vendors took the world by surprise, there was plenty of warning that such a development was inevitable.

NBC, alongside Fujitsu and Hitachi, the other two vendors in the field, is deeply involved in the creation of the Fifth Generation Computer Systems.

The plans for the next generation of computers call for a combination of Von Neumann and Non-Von Neumann architectures which will respectively run at 100 million and 10,000 million MIPS.

Kobayashi so far shows no sign of fear that he has developed a very interesting and extraordinary advanced high technology company which, almost imperceptively has moved into the UK as part of what is looking like a very good strategy for the next 10 years.

The plans for the next generation of computers call for a combination of Von Neumann and Non-Von Neumann architectures which will respectively run at 100 million and 10,000 million MIPS.

Kobayashi so far shows no sign of fear that he has developed a very interesting and extraordinary advanced high technology company which, almost imperceptively has moved into the UK as part of what is looking like a very good strategy for the next 10 years.

EAST-WEST TRADE

Charles Christian argues for more clearly defined international rules on technological exports to Communist lands

The muddled thinking behind the Cold War exports ban

THE NEWS that UK customs authorities are instituting a "clamp down" on the smuggling and illegal export of "sensitive" high technology products to Eastern Bloc countries has served to remind us all that there are other weapons in the Cold War strategist's armoury besides Cruise and Trident.

Either the goods that are sought to be exported are on the export licensing branch's "prohibited list", which means that they may not be exported under any circumstances to anywhere in the world. Or, they are goods which may only be exported on an "export licence".

Factors that will be taken into account by the Department of Trade when considering whether or not to grant an export licence will usually include the nature of the goods - certain chemicals, atomic energy materials and military equipment are always vetted - as well as the country to which they are bound.

As much for the theory, and bearing in mind the amount of government controls and red tape that nowadays surround the running of any business enterprise, you would think that the relevant authorities would be able to enforce their export embargoes.

As an aside, perhaps reflecting the so-called inscrutability of the Oriental mind, it is interesting to note that the Chinese also possessed gunpowder, which they did not bother protecting as they only used it for filling decorative fireworks, although they went to extreme lengths to protect the secret of how they made silk.

Over the years the trade embargo on the export of strategic secrets and technology has continued to employ an important role in world affairs, right down to the mundane realities of the present day. One of the most recent incidents was the discovery and seizure of two DEC PDP-11s at Dover docks bound for Moscow via Amsterdam under the innocent guise of mere "typesetting equipment".

Cray Research has begun to sell gallium arsenide to the Soviets, and the mechanics of how the current technology embargo is of

"wrong hands", albeit by circumstances, is of

course important, but should you also prevent the export of process control and automatic test equipment on the grounds that it might be used in the manufacturing stages of the production of military equipment by the Soviets?

If you accept this argument then logic would indicate that the US should bring their shipments of grain to the USSR under the COCOM provisions, as there is a very large traffic ready.

The obvious difficulty here is

that the Russians do not allow any

one into their production plants, so it is impossible to find out how

much Western kit they have obtained. Similarly, if a Western company is involved in illegal exporting, it is unlikely that their files will contain formal orders written on Kremlin notepaper.

Most illegal exports involve circuitous transport routes with goods reaching the USSR from the US via the UK, Holland, Spain, Turkey, Austria and then on through Poland, Romania or Bulgaria.

The identity of the goods may change during transit, thus the DEC minicomputers at Dover had miraculously turned into typesetting equipment - and it is not unusual for the equipment's physical nature to be cosmetically altered by a new coat of paint and perhaps some different serial numbers, for which, of course, the appropriate documentation has been "obtained".

Further confusion and covering of tracks can be caused by the fact

that the original vendors and possibly even their customers will be totally unaware of the clandestine transactions and so be acting completely innocently.

If the culprits are found, the law

does not provide much in the way

of penalties. The financial rewards

for their business. Once again the

measures could hurt the innocent just as much as the guilty.

If the culprits are found, the law

does not provide much in the way

of penalties. The financial rewards

for their business. Once again the

measures could hurt the innocent just as much as the guilty.

If the culprits are found, the law

does not provide much in the way

of penalties. The financial rewards

for their business. Once again the

measures could hurt the innocent just as much as the guilty.

If the culprits are found, the law

does not provide much in the way

of penalties. The financial rewards

for their business. Once again the

measures could hurt the innocent just as much as the guilty.

If the culprits are found, the law

does not provide much in the way

of penalties. The financial rewards

for their business. Once again the

measures could hurt the innocent just as much as the guilty.

If the culprits are found, the law

does not provide much in the way

of penalties. The financial rewards

for their business. Once again the

measures could hurt the innocent just as much as the guilty.

If the culprits are found, the law

does not provide much in the way

of penalties. The financial rewards

for their business. Once again the

measures could hurt the innocent just as much as the guilty.

If the culprits are found, the law

does not provide much in the way

of penalties. The financial rewards

for their business. Once again the

measures could hurt the innocent just as much as the guilty.

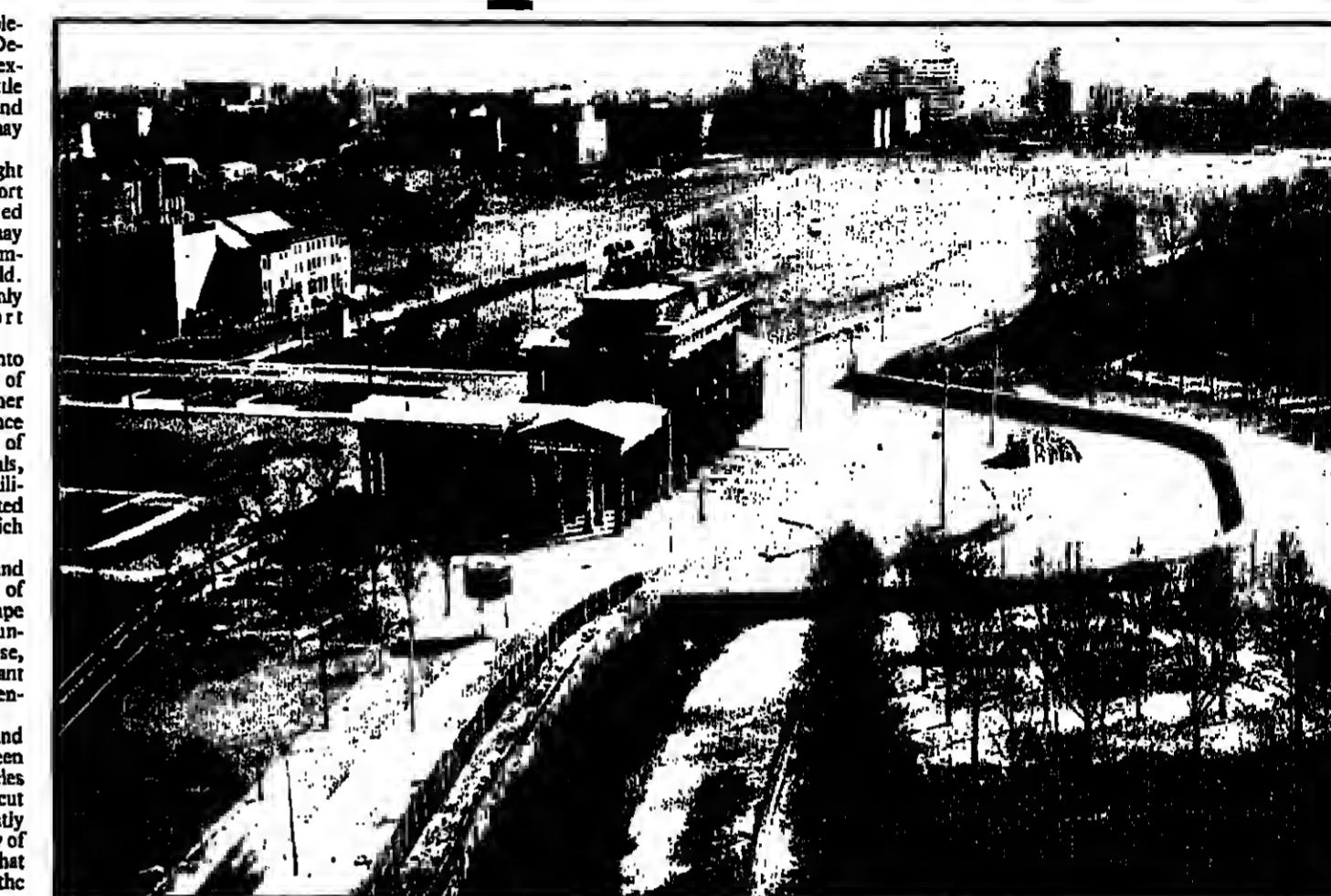
If the culprits are found, the law

does not provide much in the way

of penalties. The financial rewards

for their business. Once again the

measures could hurt the innocent just as much as the guilty.



BERLIN WALL . . . Symbol of the Cold War in which computer technology is increasingly important.

good chance that the grain would be converted into bread which would in turn be eaten by employees of the Soviet armaments industry.

Unfortunately, the COCOM countries do not appear to have got their collective thoughts very clear as to where to draw the line concerning which products should be just as much at home running a nuclear power station to heat and light Moscow, as it would be to control a power station generating the fissionable materials needed for nuclear warheads.

And then there is the question of just how far down the line do you go? It is one thing to prevent the export of completed products that could potentially be used for military purposes. But should you also prevent the export of process control and automatic test equipment on the grounds that it might be used in the manufacturing stages of the production of military equipment by the Soviets?

If you accept this argument then logic would indicate that the US should bring their shipments of grain to the USSR under the COCOM provisions, as there is a very large traffic ready.

The result is uncertainty, with the only people to suffer being innocent Western intermediaries.

At least one UK systems house has recently gone into liquidation purely because of the cash-flow problems that arose due to its failure to obtain further shipments of computers from the US for export to Eastern Europe, although it had already obtained the necessary UK export licence clearances.

The second major problem is the lack of evidence, for it is very difficult to ascertain just who is shipping goods illegally and how large the traffic really is.

The obvious difficulty here is that the Russians do not allow any

one into their production plants, so it is impossible to find out how

much Western kit they have obtained. Similarly, if a Western company is involved in illegal exporting, it is unlikely that their files will contain formal orders written on Kremlin notepaper.

Most illegal exports involve circuitous transport routes with goods reaching the USSR from the US via the UK, Holland, Spain, Turkey, Austria and then on through Poland, Romania or Bulgaria.

PLATFORM

Hannah Rose is an independent consultant.

Does the privacy Bill really get the balance right?

**PROFILE**

Mid-Atlantic manager who puts agility at a premium

PAUL BAILEY, Digital Research's director of European operations, is the archetypal mid-Atlantic man. This is partly because he has joined the small club of young, fourth-generation computer executives whose rule-of-thumb program reads: "If day equals Tuesday, place equals California." And it is partly that most of his life has been a bit like that anyway.

He was born in Nigeria, went to school at Douai in Berkshire and to university in Bristol, while his parents lived for much of that time in the US. After taking a degree as an electrical engineer – like his

by George Black

father and brother – he worked for the Ministry of Defence at Aldermaston before going abroad again. For 10 years he worked for Tektronix Holland and became its European marketing manager.

Only his decision to go to Digital has brought him back to within a few miles of his school and his first job: now he has anchored himself at Newbury. But his duties won't allow him to become desk-bound, because his brief is to establish the firm as an integral part of the microcomputer software scene in all the major European countries.

"Globetrotting is just an extension of what I have always done," he says, brushing aside any suggestion that his first year with Digital must have been pretty fraught.

"No, it's really been a lot of fun," he insists – though if he



BAILEY... "It's no good analysing problems to death."

wants to check if everyone else thinks the pace that easy he should ask his receptionist.

Bailey is one of a little group of Digital people who migrated to Digital recently. Chief among these was John Rowley who was responsible for persuading him to follow.

"I didn't know much about Digital though the name CP/M seemed to be everywhere. I went over to Pacific Grove, Monterey, and found a lot of enthusiasm there. There seemed to be a lot of activity late in the evening, though

there was also a lack of professionalism in some areas."

The success of the CP/M family of operating systems on 8-bit micros had given Digital an \$8 million revenue and a staff of 120.

Rowley believed, and quickly convinced Bailey, that Digital should stop being locked into the West Coast of America and get itself dispersed as an international organisation.

Rowley is now company president and founder Gary Kildall has moved aside to concentrate on research.

It is not to say that all the changes have been in one direction. A general duty has been placed on the Registrar "so to perform his function as to promote the observance of the data protection principles"; the courts will now be able to order the rectification of inaccurate data even if no damage has been caused to a data subject; and the Data Protection Tribunal (to which data users will be able to appeal against decisions of the Registrar) will expressly include "persons to represent the interests of data subjects".

On balance, it is clear why opposition peers were frustrated and Lord Mottistone was satisfied. As Lord Mischnon, winding up the debate put it "every amendment that was suggested by the CBI and was accepted meant that, from the point of view of the noble Lord, this was now a very acceptable bill; whereas, of course, the fact that the government did not accept any one of the major amendments of the National Council for Civil Liberties also meant that it must be a very good bill and that no further discussion was necessary".

At first glance, this seems to be acceptable, if not highly satisfactory, to the computing industry. But, if the legislation does not work or if it comes to be widely seen as defending data rather than defending people from the misuse of data, it could be counterproductive. Worse still, the exemptions given by the government to itself and to industry could increase public distrust of "Big Brother" – and identify computing as an integral part of what is feared.

Concern for civil liberties is a matter of individual political commitment, not one for the computing industry, or its members as such. They, however, must be concerned that legislation gets the balance right so as to increase public confidence in computing as a social – and as well as a commercial – benefit. It remains doubtful whether the bill strikes the right balance.

They disagreed (in the vehemence yet polite manner of Lords) with Lord Mottistone. As Lord Donaldson of Kingsbridge said: "The point is that we now have a chance to put right things which are grossly wrong. I hope that we shall fight to the last minute of the last hour to do so... because they are fundamental to civil liberties everywhere."

Whatever the record, there can be little doubt that the government will, following the election, be at little inclined to accept amendments on matters of principle from the opposition as it was before.

Hannah Rose

THE House of Lords debated the Data Protection Bill on Thursday July 5. This was the second reading of the second bill. The original bill had completed all its stages in the Lords and was being considered by a Commons committee when the general election was called. Now the whole process has to begin again and the previous arguments repeated.

To say the least, the debate was marked not merely by the usual decorum of their Lordships' house, but a barely suppressed sense of weary boredom. As Lord Elwyn-Jones, leading for the Labour opposition, elegantly put it, there was a sense "not only of déjà vu but of déjà entendu".

The legislation is essentially the same as before, although the government has taken the opportunity to deal with some of the points raised in debates earlier this year on the original bill. The general direction of the changes can be assessed from the reactions of various speakers in the debate.

Lord Mottistone, who was assiduous in presenting the case of the CBI (as well as sometimes contradictory ideas from others), unreservedly welcomed the "improvements", felt that "the main body

"We now have a chance to put right things which are grossly wrong. I hope that we shall fight to the last minute of the last hour to do so"

of the work has been done" and hoped "that we shall be able to deal with this matter reasonably expeditiously and get it on the statute book as quickly as possible".

He believed "that we have already fought the main battles and that we should view this occasion as the time when those battles have been fought. It would be slightly tedious for the House to go over ground that we have already covered."

Labour, Liberal and Social Democratic peers regretted that the government had made no concessions whatsoever on the issues which they had previously raised – for example, the scope of exemptions, the potential pressures upon those who hold data to breach confidentiality in certain circumstances, the absence of any advisory committee and of any provision for even voluntary codes of practice to be recognised.

They disagreed (in the vehemence yet polite manner of Lords) with Lord Mottistone. As Lord Donaldson of Kingsbridge said: "The point is that we now have a chance to put right things which are grossly wrong. I hope that we shall fight to the last minute of the last hour to do so... because they are fundamental to civil liberties everywhere."

Whatever the record, there can be little doubt that the government will, following the election, be at little inclined to accept amendments on matters of principle from the opposition as it was before.

Hannah Rose

FROM COMPUTER WEEKLY OF JULY 1973: "The movement came in for much criticism from the Computer Society Committee on Science and Technology for failing to 'establish definite objectives for the British computer industry. The committee wanted the government to purchase the equipment best suited to its needs, regardless of origin', although it recommended that 'a strong independent industry for

the supply of equipment and services should be fostered in the UK'."

ICL sold a 256K System 3 to Czechoslovakia for a VDU-based hotel reservation system. IBM launched the System 3/Model 15 to fill the gap between its existing System 3 machines and the 370 series. The company also announced larger mainframes for the 370/15, 125 and 135, giving a maximum of 512Kbytes of memory on the 135.

Chips are in the news again

MY colleague, correspondent for Computer Weekly's growing popularity with the denizens of that fair city, is concerned that legislation gets the balance right so as to increase public confidence in computing as a social – and as well as a commercial – benefit. It remains doubtful whether the bill strikes the right balance.

Only the other evening, as he was returning from the massage parlour, he spied a lady poring over a copy of this journal. Not much new there, you might think, intelligent persons everywhere hang on our every word.

Well, she wasn't actually poring over it, more sort of pouring vinegar over her fish and chips which were contained within. We always knew that we were absorbing.

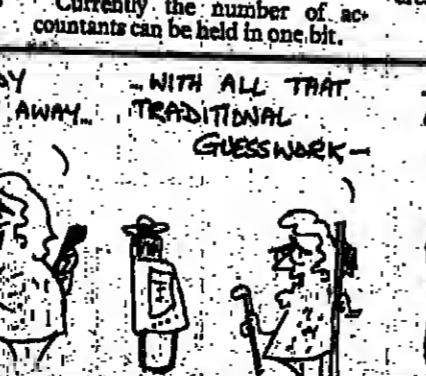
Currently, the number of accountants can be held in one bit.



Count on one finger

APART FROM BT's recruitment drive for its Merlin division, there are moves afoot to appoint more staff in other areas. BT boss Sir George Jefferson is anxious to increase the number of qualified accountants in the 61 telephone areas.

Currently, the number of accountants can be held in one bit.





Milton Keynes is the location for Europe's first Energy Park.

CONSULTANTS CASEBOOK

SYSTEMS planning studies can be fraught with hidden difficulties and pitfalls. The failure of an ambitious information systems plan can be disastrous, both to the data processing department involved and the company which it serves.

We were called in by the chief executive of a multinational electrical goods company, following the collapse and cancellation of its five-year DP plan. The chief executive acted as chairman of the company's Information Systems Control Group, which had been set up to monitor and control major new computer and systems developments.

Work on the five-year strategy had been cancelled less than a year after the start of development work.

This was the result of rapidly escalating cost estimates on almost every aspect of the development process, coupled with a lack of tangible results in management's eyes, and dwindling commitment to the benefits originally foreseen.

Needless to say, the DP function was in complete disarray and confusion. Morale had sunk to a low ebb, with everyone looking over his shoulder expecting the axe.

The cost of cancellation had so far been calculated at more than £400,000, made up of the costs of buying several major software packages and the wasted manpower effort to date.

As for the company's management, it was thoroughly disenchanted with the entire process of computer system development and was wondering where on earth it had gone wrong.

It was still, however, committed to changing and extending the present system set up. But not at any cost.

The company was the European arm of a Canadian giant, which had been operating in Europe for the past 25 years and was allowed

The company believed that the two-year payout would represent a fair investment

considerable freedom by its parent.

The company agreed cash flow, revenue, profit and investment targets with Canadian management, and was thereafter permitted to run an operation to suit local European conditions and markets.

It had extensive manufacturing and marketing networks throughout Europe, was headquartered in London and had become a profitable decentralised operation based in six countries.

However, the company had retained a central mainframe computer for each of the six subsidiaries, as originally set up in the early 1960s. Each operation ran a medium-scale Burroughs mainframe, feeding, and being fed, every month-end by the London HQ installation on a dial-up basis.

Over the years, a whole host of minis and micros had also grown up in each country. The costs of running and maintaining this

Disaster can follow a failed information systems plan

Tower of Babel had escalated and were running out of control.

Also, the company had become concerned that it was falling behind its major competitors in terms of its production control techniques and its marketing information systems.

Cosmetic or minor surgery was no longer appropriate for sorting out the situation, and a major review of information systems was commissioned by the group.

The company had examined a number of strategic system planning techniques, marketed for the most part by hardware manufacturers. It decided not to use any of them, fearing (rightly or wrongly) bias on the part of the manufacturers.

So it turned to the London HQ's computer department, which had maintained a fine reputation as a very fair investment in preparing itself with systems to match the challenge of the late 1980s and the 1990s.

However, less than a year later, hardware costs had increased by 20%, system conversion costs had escalated by an alarming 150%, systems developments had risen by £700,000 and the cost foundation of the systems plan was beginning to look very shaky indeed!

The benefits originally foreseen

were expected from the implementation of the plan, through a more efficient use of plant, increased marketing profitability and interest savings on working capital reductions.

The total cost of the plan originally stood at £7.5 million, which included the one-time purchase of new equipment and leased

lines, the purchase of software and the five-year manpower development effort.

The company believed that the two-year pay-off from the end of implementation would represent a very fair investment in preparing itself with systems to match the challenge of the late 1980s and the 1990s.

However, less than a year later, hardware costs had increased by 20%, system conversion costs had escalated by an alarming 150%, systems developments had risen by £700,000 and the cost foundation of the systems plan was beginning to look very shaky indeed!

The benefits originally foreseen

were expected from the implementation of the plan, through a more efficient use of plant, increased marketing profitability and interest savings on working capital reductions.

The total cost of the plan originally stood at £7.5 million, which included the one-time purchase of new equipment and leased

lines, the purchase of software and the five-year manpower development effort.

The company believed that the two-year pay-off from the end of implementation would represent a very fair investment in preparing itself with systems to match the challenge of the late 1980s and the 1990s.

However, less than a year later, hardware costs had increased by 20%, system conversion costs had escalated by an alarming 150%, systems developments had risen by £700,000 and the cost foundation of the systems plan was beginning to look very shaky indeed!

The benefits originally foreseen

were expected from the implementation of the plan, through a more efficient use of plant, increased marketing profitability and interest savings on working capital reductions.

The total cost of the plan originally stood at £7.5 million, which included the one-time purchase of new equipment and leased

lines, the purchase of software and the five-year manpower development effort.

The DP people had viewed the development on a monolithic basis. The hardware, software, telecoms and systems developments all converged together into one large and intricate development process.

The user would see nothing for 18 months and it had proved impossible to maintain management's interest over this period.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

An education and an

understanding of the development process was required to get the best out of the system. The user would see nothing for 18 months and it had proved impossible to maintain management's interest over this period.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

An education and an

understanding of the development process was required to get the best out of the system. The user would see nothing for 18 months and it had proved impossible to maintain management's interest over this period.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

An education and an

understanding of the development process was required to get the best out of the system. The user would see nothing for 18 months and it had proved impossible to maintain management's interest over this period.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

An education and an

understanding of the development process was required to get the best out of the system. The user would see nothing for 18 months and it had proved impossible to maintain management's interest over this period.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

However, less than a year later, hardware costs had increased by 20%, system conversion costs had escalated by an alarming 150%, systems developments had risen by £700,000 and the cost foundation of the systems plan was beginning to look very shaky indeed!

The benefits originally foreseen

were expected from the implementation of the plan, through a more efficient use of plant, increased marketing profitability and interest savings on working capital reductions.

The total cost of the plan originally stood at £7.5 million, which included the one-time purchase of new equipment and leased

lines, the purchase of software and the five-year manpower development effort.

The DP people had viewed the development on a monolithic basis. The hardware, software, telecoms and systems developments all converged together into one large and intricate development process.

The user would see nothing for 18 months and it had proved impossible to maintain management's interest over this period.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

An education and an

understanding of the development process was required to get the best out of the system. The user would see nothing for 18 months and it had proved impossible to maintain management's interest over this period.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

However, less than a year later, hardware costs had increased by 20%, system conversion costs had escalated by an alarming 150%, systems developments had risen by £700,000 and the cost foundation of the systems plan was beginning to look very shaky indeed!

The benefits originally foreseen

were expected from the implementation of the plan, through a more efficient use of plant, increased marketing profitability and interest savings on working capital reductions.

The total cost of the plan originally stood at £7.5 million, which included the one-time purchase of new equipment and leased

lines, the purchase of software and the five-year manpower development effort.

The DP people had viewed the development on a monolithic basis. The hardware, software, telecoms and systems developments all converged together into one large and intricate development process.

The user would see nothing for 18 months and it had proved impossible to maintain management's interest over this period.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

However, less than a year later, hardware costs had increased by 20%, system conversion costs had escalated by an alarming 150%, systems developments had risen by £700,000 and the cost foundation of the systems plan was beginning to look very shaky indeed!

The benefits originally foreseen

were expected from the implementation of the plan, through a more efficient use of plant, increased marketing profitability and interest savings on working capital reductions.

The total cost of the plan originally stood at £7.5 million, which included the one-time purchase of new equipment and leased

lines, the purchase of software and the five-year manpower development effort.

The DP people had viewed the development on a monolithic basis. The hardware, software, telecoms and systems developments all converged together into one large and intricate development process.

The user would see nothing for 18 months and it had proved impossible to maintain management's interest over this period.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

However, less than a year later, hardware costs had increased by 20%, system conversion costs had escalated by an alarming 150%, systems developments had risen by £700,000 and the cost foundation of the systems plan was beginning to look very shaky indeed!

The benefits originally foreseen

were expected from the implementation of the plan, through a more efficient use of plant, increased marketing profitability and interest savings on working capital reductions.

The total cost of the plan originally stood at £7.5 million, which included the one-time purchase of new equipment and leased

lines, the purchase of software and the five-year manpower development effort.

The DP people had viewed the development on a monolithic basis. The hardware, software, telecoms and systems developments all converged together into one large and intricate development process.

The user would see nothing for 18 months and it had proved impossible to maintain management's interest over this period.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

No one in the existing DP organisation was skilled in putting together (or costing) such a complex plan. As a result, cost and time overruns were unavoidable and user management disenchanted it.

THE AUTOMATED OFFICE

Integrated office automation sounds wonderful – but how does it work in practice? Martha Turinas describes it

The system that is more than the sum of all its parts

INTEGRATED OFFICE automation is more than the sum of its parts – computing, telecommunications and information handling in various forms. For the supplier it is a completely new market; for the user it is a completely new experience.

The implementation record of the early integrated systems has shown that there can be big problems in converting the theoretical benefits of the equipment into everyday practice.

For both suppliers and users, integrated office automation is a far cry from the familiar practices of data processing and the use of conventional office equipment supply.

In data processing the environment is controlled and the well-specified tasks are handled by in-

For both suppliers and users, integrated office automation is a far cry from the familiar practices of data processing and the use of conventional office equipment supply



For the user, integrated office automation involves more than just keyboards.

house experts in the technology. In office automation working methods are unstructured and everyone, from the managing director to the most junior clerk, may be asked to change the way they work and communicate.

One problem may be in the wide range of facilities that are provided. In an integrated office system, users may have access to word processing, electronic mail, electronic filing and retrieval, administrative services (such as a personal directory, message recording, personal diary, calculation, meeting scheduling), personal computing, corporate data processing, voice messages, telecommunications, local office processing and outside databases.

Having all these facilities in a single desktop workstation is, of course, the key benefit which office automation offers. But it is not easy to design and implement a system with guaranteed success because the office environment is not controlled and because different people will use their terminals in different ways, reacting to events, decisions and changing circumstances in the unpredictable pattern that typifies office work.

Hence the value to users of continued consultancy support as they strive to get the most out of their integrated systems. This support

can come from general consultants or from the system supplier, where the supplying company's knowledge of its equipment plays an important role in maximising its effectiveness in use.

In approaching office automation, most user organisations will start with a pilot project of some type, with the general intention of gradually expanding its applications throughout the organisation.

The pilot department or area should be chosen with care. It should be large enough to have the necessary "critical mass" to make electronic communications worthwhile, and it should have reasonably high visibility within the organisation.

Suitable candidates might be a marketing department or a personnel department, where much of the work is event-driven and unstructured and where there is a lot of communication.

Identifying suitable pilot project will normally be a part of the planning and feasibility assessment that precedes the acquisition of equipment. Other aspects of the introduction of the new system should also be covered at that stage, usually in conjunction with the supplier. But, all too often, while overall strategy may be clear, the many details involved in effective implementation are overlooked or left until later.

Education is one of the most crucial aspects. There is a tendency to assume that, after a short session of instruction on how to use the workstation, all will be well. It is general practice for users to be given, say, two days' training on the equipment and they are then expected to get back to work more or less as normal. This ignores the fact that what is involved is a totally new way of working.

Experience has shown that this applies to all sizes of organisation, from a small market research company, for example, to the head office of a major retail company. They are all learning that to introduce integrated office systems involves much more than simply replacing the old with the new and hoping for the best.

The introduction of an integrated system can involve some very basic thinking. It is feasible, for instance, for an organisation to automate the processing of forms using the new electronic system. The whole process of calculating, submitting, checking, approving and paying expense claims, as one example, could be handled easily by the system – but how would this affect existing authorisation procedures?

In other words, the user organisation must accept the responsibility for carefully assessing not simply whether the proposed new office system can do particular tasks, but, more importantly, whether the system should do them; and what procedural changes will have to be made to accomplish the task in the most practical way. It may seem an obvious point to make but these implications are often overlooked.

In terms of the use of the equipment, a common mistake is to fall into the way the system is used – to adopt standard procedures for such things as indexing and access to shared databases and other shared files. People tend to think that, as soon as they are linked to a computer, they have an electronic black hole in which they can store anything, and everything, without limit.

The confusion that can follow the proliferation of individual



Floppy discs are all too real.

The setting up an agreed "house style" for what is to be stored, and how, and for how long, and how appropriate access for authorised persons is to be determined and maintained is all very basic, very detailed – and very important for success.

Thus an integrated office system will bring new ways of working, plus many potential benefits, but there are many pitfalls to avoid, and a need to impose some structure on an essentially unstructured set of activities. Giving people the new workstations on their desks is not enough. Who will ensure that there is no conflict between individual needs and those of the organisation? Or that all the boring but essential details are covered?

At senior management level the overall approach to integrated office automation will involve three people directly – the data processing manager, the telecommunications manager and the office manager. At the very least their views must be in line.

Arguably, in the long term, only those organisations which bring these three disciplines together under one person will succeed with an integrated system.

But the real key to success in implementing integrated office systems will lie in the choice of person for the detailed co-ordination, planning and implementation, in

cluding phasing, parallel running, layout and ergonomic aspects; training, including general seminars and tailored in-house briefings; and post-implementation "nursing" to ensure that the equipment is used to its full capacity.

Working with the individual users of the system, the supervisor will need technical knowledge, the skills of a diplomat and a salesman, appropriate authority, a talent to attend to detail, good personal skills, an ability to develop controls and procedures, tact and understanding. He or she will need to take a business view. It is an exacting job specification, for it is a crucial job.

Against this background, the consultant can aid the user organisation in a number of specific ways, starting before the system is

In general, the basic capabilities of an integrated system will be tailored by the user organisation to meet its own requirements, and the organisation will write its own procedures manual.

There is no magic wand that can be waved to produce an instantly integrated, automated office. But there are a number of golden rules, starting with the initial essentials of top management commitment and user involvement at all stages. The real needs must be iden-

THE AUTOMATED OFFICE

Roger Winder describes what he believes is the central office automation denominator



Word processing is the common office factor

ing to the latest LAMSAC figures, and about 2,000 word processor operators are on the national payroll.

The London Borough of Merton, which has a staff of 7,000 administering an area of 9,380 acres, has a clearly defined strategy.

"Our policy is that, where an application involved predominantly

word processing or text manipulation,

such as co-ordinating or

agendas, we recommend dedicated

word processing machines," said

Jim Frankland, head of management services.

"Where the balance lies in data manipulation we have recommended ICL DRS 20

micros."

The office of the future has to be designed with flexibility in mind, to adapt to changing circumstances or technological developments.

This means that the roles of different applications will have to overlap to a small degree, with emphasis placed on the integration of the whole concept.

Standard software packages are not of the same quality as dedicated word processors for text manipulation, both in the number of functions and in the standard of the screen," explained William McKee, chief executive at Merton.

At Merton, the motive for installing word processing equipment – a cluster of four terminals linked into a Wordplex System 7 shared logic CPU, plus two stand-alone 803 systems – was to save money, and this has been achieved.

Within secretarial or clerical environments there is often a need, for example, while typing a report to refer to outside information which may be held on a database. To handle this situation efficiently, the word processor workstation must be capable of performing more than one interactive task simultaneously, although the majority of computer operating systems are incapable of achieving this at the moment.

Further improvements in efficiency have been made through holding basic standard documents on file, such as legal documents, leases and other documents involved in council house sales. These only need minor amendments before a complete new personalised document can be issued, and a register of the borough's 162,000 residents is held to facilitate this.

The need to store complex documents for periodic updating and

re-issue is one common to many organisations. Probably few of the 14 million customers who shop at Marks and Spencer each week realise what a large part word processing plays in their choice of goods.

The London Borough of Merton, which has a staff of 7,000 administering an area of 9,380 acres, has a clearly defined strategy.

"Our policy is that, where an application involved predominantly word processing or text manipulation,

such as co-ordinating or

agendas, we recommend dedicated

word processing machines," said

Jim Frankland, head of management services.

"Where the balance lies in data manipulation we have recommended ICL DRS 20

micros."

Once completed, the checking list summaries are sent to food and textile departments to form the basis upon which they will order new goods, or adjust sales of existing ones.

Marks and Spencer is anxious

only to use technology where it

benefits the company, but this has

of checking list summaries.

A checking list summary is a detailed stock and sales report compiled from details of selling prices, stock-in-hand and stock-on-order sent in by the 260 UK stores. Each department of the store completes a list, which may run to five A3 pages for a food section, or up to nine for textiles, on a weekly and fortnightly basis.

Since 1976 when the first stand-alone system was installed as an experiment, Marks and Spencer has built up a word processing unit with 12 terminals connected to a Wordplex System 7, and other stand-alone systems for directors' use. About 60% of processing time is devoted to re-vamping program specifications for the DP department, but a further significant proportion is spent on preparation

of checking list summaries.

A final checking list summary is produced by the secretarial services department, a job which occupies two screens full-time for a week, but which has reduced the amount of time spent on each document from 65 minutes to 37 minutes.

Once completed, the checking list summaries are sent to food and textile departments to form the basis upon which they will order new goods, or adjust sales of existing ones.

not prevented the company (which had a turnover of \$2,505 million for 1983) from being a great innovator of new working methods.

Acting upon a philosophy of capturing keystrokes only once, it is pioneering use of an OCR (optical character recognition) machine to input draft documents to a word processor.

Having standardised on the Courier 10 typeface for all its typewriters, Marks and Spencer has now invested in a Mitsui OCR document reader so that paperwork produced on any typewriter in the company may be fed direct to the word processor CPU for manipulation later.



It's 1983. Has anyone told your telephone?

Your telephone is so much a part of your business that it's very unlikely you've stopped to consider it.

And chances are your telephone system is operating in much the same way as business telephones have for twenty years.

So you may not be aware of just what a modern system could do for you.

We're Thorn Ericsson. One of the market leaders in communications.

We make and sell a range of business telephone communications systems that use the very latest technology. From relatively small units with ten lines or less to massive 12,500 line exchanges capable of handling speech and data simultaneously at ultra high speed.

They have one thing in common.

They all add value.

So much so that they will pay for themselves very quickly indeed. In greater efficiency. And substantial savings on your phone bill.

You'll find a superb example in our Diavox 824 System. An electronic office communication system that brings the latest in business efficiency to the smaller company.

You can use Diavox 824 as a straightforward operator-controlled system.

As a key system with no operator. As an executive/secretary system. As a call distribution system. Even a combination of these.

If you are considering an office move, the need to discuss a new telephone system is obvious.

We believe, however, we can show every business how our telephone systems can make a positive difference to the way it works.

One that can be measured in £s.

The coupon is the first step.

To: THORN ERICSSON Ltd, Viking House, Foundry Lane, Horsham, West Sussex RH13 5QE.

Please tell me more about the 12 line 24 External Diavox 824 System □ Internal Direct Speech Intercom Systems □ Larger PABX Systems □ Staff Location Systems □ NAME

COMPANY

ADDRESS

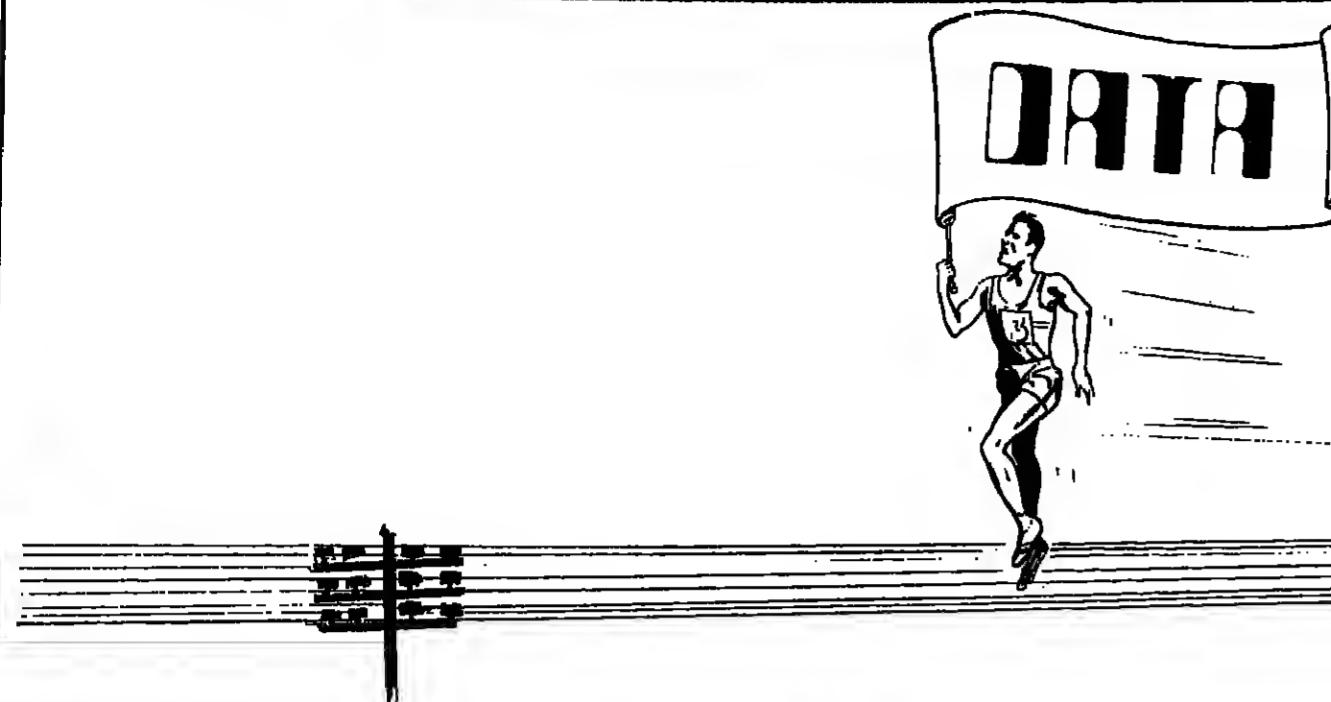
TEL:

THORN ERICSSON
Partners in Communication

CW 7/83

Martha Turinas has spent several years in general management consultancy and is a member of the Institute of Management Consultants. She has recently been concentrating on the management of implementing office systems and is a London-based member of the Sperry Consulting Group.

Few Marks and Spencer shoppers realise how much the store depends on word processing.



Search for higher speed and greater reliability goes on

Tony Dench of Racal-Milgo explains how modems are becoming faster and more efficient to suit users

IT WAS relatively easy for telecommunications engineers to rise to the challenge from computer users and exploit existing voice telephone networks to carry computer data.

The medium offered existing and very comprehensive coverage of most technologically advanced countries and proved immensely practical for carrying data at speeds up to and above 9,600 bits per second.

Over the past decade, however, computer technology has gradually outgrown the technical compromise of voice-grade telephone lines and network planners are now looking to the digital network to provide the medium for a new generation of ultra-high speed data communications.

The change will be slow - with finance playing a major role - and it is generally accepted that it will be a good 10 years before truly international digital networks can be taken for granted.

The problems which still confront the data communications specialist are how to make the best use of existing analogue networks and how to satisfy the computer users' calls for still higher speeds and greater reliability while working within the telephone line's limitations.

This article will discuss data

communications at 9,600 bps - the most commonly used "high-speed" - and detail the emergence of a new technique which promises better and more reliable data communications.

Although the human voice has a wide bandwidth, that is it covers a large frequency range, the information conveyed in speech can be propagated within a comparatively restricted bandwidth.

Data transmitted from a computer is in a digital form, so it cannot be connected directly to a voice telephone circuit. A number of control conditions are required to enable computers or terminals to communicate and each would require a separate voice circuit. To overcome these difficulties data modulator/demodulators, or modems, were developed. The function of a data modem is to convert the digital output from a computer into a signal suitable for transmission on a voice line and to concentrate the control conditions on to a single circuit.

One of the earliest data modems used modulation techniques was Frequency Shift Keying, or FSK. This technique transmits a frequency for each of the two digital input states and is easily detected at the receiving end. It is only of use for asynchronous or anisochronous transmission codes.

With FSK techniques the line signalling speed, measured in units/second, is the same as the computer transmission speed and at lower speeds bidirectional transmission is possible. Recommendation V21 of the International Standards body, the CCITT, operates at 9,600 bps and subsequently was used to a lesser degree on PSTN dial-up operation.

Obviously FSK techniques were going to restrict data transmission speeds and so the leap was made to Phase Shift Keying (PSK), Differential Phase Shift Keying (DPSK), Amplitude Modulation/Differential Phase Shift Keying (AM/DPSK) and Quadrature Amplitude Modulation (QAM) Schemes.

Phase Shift Keying operates in the same manner as FSK, except that the phase is altered instead of the frequency. It did not prove particularly suitable for data transmission and was only of use for asynchronous or anisochronous codes. Differential Phase Shift Keying, however, proved to be more suited to synchronous transmission.

The next step in modem development was to use a separate transmit and receive circuit and a wideband FSK signal. It should be noted that, while FSK modulation is simple, cheap and effective, it requires a comparatively large bandwidth and is inefficient in terms of throughput on a telephone channel. The lowest transmitted carrier frequency has to be higher than the data signalling rate or it would be impossible to detect at the receiver. (If the frequency were lower, less than one cycle would be transmitted per bit). Using a separate transmit and receive circuit, (known as a four-wire circuit), because four wires were involved - two for transmit and two for receive) data signalling rates of 1,200 bps can readily be achieved, with a secondary speed of 600 bps being available if required.

As the need for high speed data transmission increased so did the demand for efficient line codes and synchronous transmission was largely adopted by computer manufacturers for speeds of 2,400 bps and above. Figure 1 shows a "Constellation" diagram for DPSK signalling; the example given is CCITT Recommendation V27, which is for a speed of 4,800 bps. Each point on the diagram, or

■ From Page 24

number of data bits can be transmitted per unit time.

The 4 x 4 scheme is similar to Recommendation V29 in that it also operates at a line signalling speed of 2,400 bps and utilises 16 symbols. The principal differences are that the symbol locations are given as cartesian (rectangular) co-ordinates and not polar or coordinates as in Recommendation V29 and that the symbol co-ordinates are absolute and do not change with a fixed phase difference of 90°, hence they are considered to be in Phase Quadrature and this gives QAM its name. (It should be

noted that the term QAM is often used for AM/DPSK Modulation Schemes which do not or only partly employ quadrature amplitude modulation.)

Now to the on-line comparison of 4 x 4 and V29 modulation. Both schemes are a combination of phase and amplitude and both require a line signalling speed of 2,400 bps to transmit data at 9,600 bps. The similarity of the two schemes means that in practice they do not perform altogether differently. The 4 x 4 scheme though has two distinct advantages in terms of performance over Recom-

mendation V29; one is its increased immunity to "amplitude hits" and the other is its increased performance on noisy lines and in particular on PSTN dial-up calls.

Amplitude hits are caused by automatic route switching (in the event of the primary route failing) or transient AGC (Automatic Gain Control) operation on the trunk network carrier system. The form of disturbance amplitude hits cause a momentary jump, upwards or downwards, of receive level. This may cause loss of synchronisation between transmitter and receiver and corrupt the

data being transmitted during the "hit."

Any modem offering increased immunity to this disturbance must be of major advantage to data transmission users.

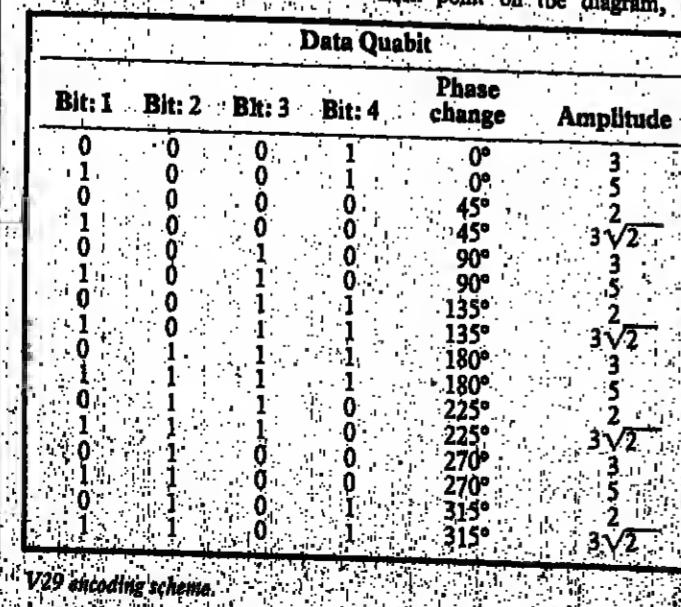
The increased performance of the 4 x 4 scheme on noisy lines should increase the data throughput. Data throughput is a measure of the actual data correctly received by the receiving device and is usually less than the data transmission speed. The main reason for this is the "block retransmission" system of error correction, often referred to as ARQ (Automatic Retransmit Query).

With this form of error correction each received datablock is checked for errors. If any errors are received a supervisory message is returned to the transmitting device requesting the last block to be retransmitted.

It is apparent that any slight increase in performance on noisy lines could substantially improve data throughput efficiency.

The current term for line noise is Gaussian Noise and it is caused by the normal motion of electrons in conducting materials. The typical level of Gaussian Noise encountered on a leased data transmission line is -45dBm0, where dBm0 is decibels relative to 1 milliwatt in a 600Ω line and compared with the relative transmission level point, which varies as the signal path progresses through a network. The nominal data transmission level is -13dBm0. If the data is being transmitted at -13dBm0 and the line noise is abnormally high at -35dBm0, then the signal to noise ratio is approximately (-13) - (-35) = 22dB.

Furthermore the increased performance of the 4 x 4 scheme will make 9,600 bps dial-up operation more efficient and therefore more cost effective. The 4 x 4 Modulation Scheme is considered a major contribution to the continuation of efficient and cost effective 9,600 bps data transmission.



V27 encoding scheme

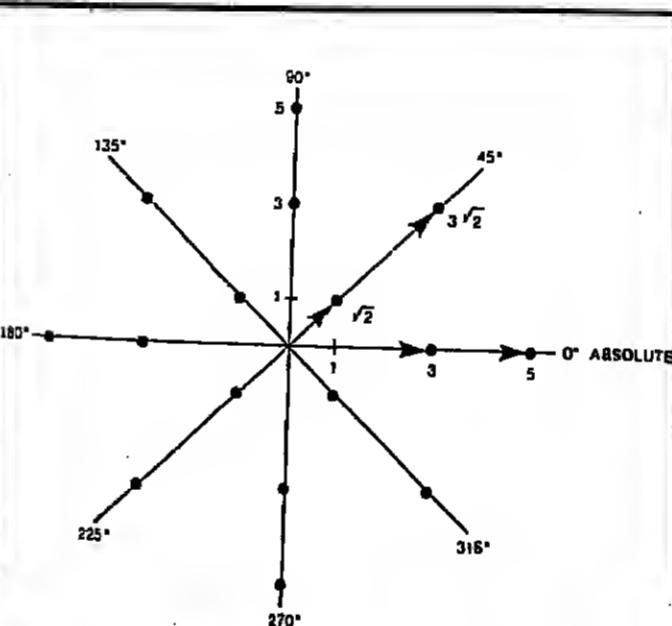


Figure 2. V29 constellation diagram.

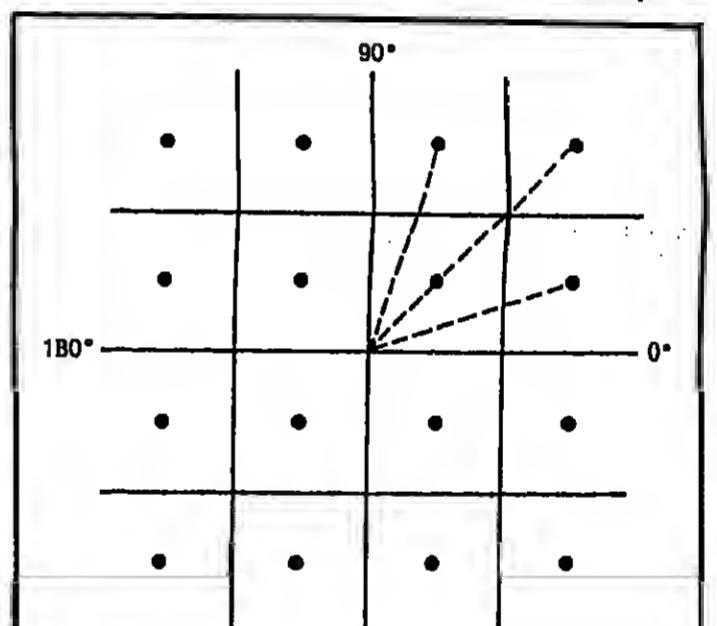


Figure 3. 4x4 constellation diagram.



DPMs, PERSONNEL MANAGERS AND PAYROLL PEOPLE ARE ALL HEADING FOR THE ROADSHOW!

They're heading for a Peterborough Software roadshow. And so should you.

Because it's our way of bringing to IBM mainframe users a comprehensive presentation of what Peterborough Software can do for your company. (And how. And why.)

It's your opportunity to learn about our human resource management packages, Unipersonnel and Unipension. To learn about how they provide you with a total and flexible solution to the problems of

power administration. And to find out something about the way they work, and what you have to do to make the most of them.

It's also your opportunity to find out something about the company behind these products, to find out how Peterborough Software think, what they are like as people, and to have your questions about Unipersonnel, Unipay and Unipension answered by our specialists.

Our roadshows kick off on 4th August at the Hyatt Carlton Tower Hotel, London, with two sessions, 2.00pm-5.00pm and 6.00pm-9.00pm. Then 2nd September at the Hyatt Carlton Tower Hotel, London.

Peterborough Software (UK) Ltd., Borough House, Newark Road, Peterborough, PE1 5YJ.

"Yes, I want to head for the roadshow! Please reserve me . . . places at the (state venue). roadshow on (date). afternoon/evening session (*delete as appropriate)

Name . . .
Position . . .
Company . . .
Address . . .

Telephone . . .
IBM Mainframe type . . .



PETERBOROUGH SOFTWARE
Our software makes sense of your hardware

Extension of digitiser technology

A SONIC digitiser, the Model GP-8, has been announced by Science Accessories Corporation, to extend some digitiser technology, making this information handling and processing technique available to new applications.

The GP-8 mates the new technology and packaging developed for the GP-7 Grafbar digitiser with the capability of the L-frame microphone array used for years with the GP-3 and GP-6 series digitisers.

The GP-8 features an 8-bit microprocessor which permits the system to perform five standard program functions via menu entry, including Origin, Line, Metric, Stream, and Cancel. The five-function menu may be located anywhere in the active area, as specified, and the menu may be erased by a dip switch control, providing an unencumbered work area with no loss of the last input function.

Another feature is two-way communication, permitting remote computer control of all digitising functions. Remote trigger capability is also offered.

Either stylus, cursor with cross-hairs, or both may be used with the GP-8 to take data and to make menu selections. The stylus contains both the sonic energy element and a ballpoint cartridge in choice of ink colours. When hard copy is not required, an inkless cartridge may be substituted.

A plastic, needlepoint, non-scratching stylus for use with X-



A SERVICE introduced on Prestel changes the traditional picture of chess as a table-bound game. Called Mailbox Chess, the new facility allows any chess player who is also a Prestel user to challenge electronically other Prestel users to a game, and to conduct each move of the game through Prestel's message service. Some 50 chess enthusiasts are already listed on Prestel's chess directory, and the service is heavily used, with many games played

through Prestel's electronic Mailbox. Prestel Mailbox also allows any Prestel user to send instant messages to any other Prestel user and has many business as well as home applications.

Our picture shows eight-year-old Charles Henderson, from Kingston, Surrey, sending his move through Prestel

Mill Reef House, 9-14 Chapel Street, Newbury, Berkshire. Tel: (0635) 45420.

The system measures the times required for the sonic energy to reach the X and Y sensors in the microphone assembly and converts these times into distance measurements in digital form.

Science Accessories Corporation (CW), 970 Kings Highway West, Southport, Connecticut 06490.

Workstation allows for transfers

A WORKSTATION called the MDB Micro/PDP-11 Computer System, from MDB Systems, is functionally equivalent to the DEC product, providing 10.4 Mbyte Winchester and dual floppy subsystem.

One major additional feature, however, is its floppy diskette subsystem, allowing diskette transferability to and from other DEC systems.

MDB Systems has designed the system to accommodate all MDB interface modules such as 8 or 16 channel multiplexers, line printer controllers, disc and tape controllers, high speed DMA modules and interprocessor-link modules.

The unit includes a removable-front panel, BPA8-T backplane/card guide assembly, with 22-bit addressing and removable bus terminator. The backplane can accommodate a total of 8 quad or 16 dual size modules (two dual and one quad modules are already installed in system). Four cooling fans provide 400cfm air circulation.

The MDB Micro PDP-11 is RETMA rack mountable, and can be slide mounted by use of optional slides.

MDB Systems (CW), 1995 N. Batavia Street, Orange, California 92655, 714/998-6900.



The VDN 52500 terminal from Aim Digital Systems.

15-inch tiltable screen

THE VDN 52500 asynchronous display terminal offers advanced features including a tiltable 15in screen and a detachable low profile Hall Effect keyboard.

The screen can be moved in both vertical and horizontal directions.

Based around the 8085 microprocessor, the electronics are mounted on a single printed circuit board located in the base of the terminal. Up to four pages of alphanumeric characters or block graphics can be stored in the terminal's memory. All upper and

lower case characters, with specified symbols, can be displayed on the screen. The display format is 24x80 characters with a 25th status line.

Remote and keyboard commands provide full cursor and screen control, editing and form management.

Cursor commands include: left, right, up, down, etc, as well as full titration.

Aim Digital Systems (CW), 98 Crofton Park Road, Crofton Park, London SE4 1AL. Tel: 01-690 44289.

CAE system runs in dual mode

A COMPUTER-AIDED engineering station for the design of digital electronic systems that functions both as a standalone 32-bit based CAB design station and as part of a computer network including mainframes, has been announced by Valid Logic Systems.

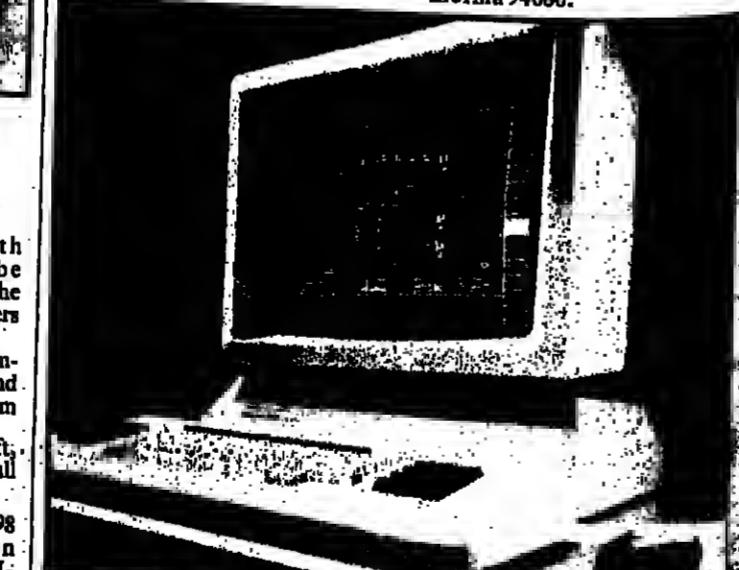
Called Scaldsystem II, the unit can operate with all Scald software validation tools as a design station or as part of a host-based configuration. When in a standalone mode the system gives the designer a dedicated 32-bit processor for validating designs, plus a 16-bit processor for graphical capture of schematics.

A range of communication facilities allows the Scaldsystem to communicate with hosts or other systems such as the Scaldsystem or Scaldstar. These include both parallel and serial ports, and a Ethernet networking capability. Data can be transferred at a speed of up to 10MHz.

The high data transfer rate allows fast interfacing between units for processing large simulations and design validations, as well as for data sharing within an organisation. Terminal emulator of VT-100 or 3270 is also available.

Scaldsystem II incorporates the Scald software tools that are used in all Valid design systems.

Valid Logic Systems (CW), 69 N. Mary Avenue, Sunnyvale, California 94086.



The VDN 52500 terminal from Aim Digital Systems.

Acoustic covers offer a quieter life

TO reduce word processor or printer noise levels — and the stress levels of everyone within earshot — Inmac has announced its acoustic cover range, called The Hushcover.

This can reduce the noise level of a typical printer from around 64dBa to less than 50dBa depending on the printer make, says Inmac, and represents a sound energy reduction of well over 95%.

The Hushcover, designed in conjunction with JCI Acoustics, has several advanced design features such as the safety win-

PRODUCTS

First shot in bid for daisywheel market

MEASUREMENT Systems has announced the release of the 32-bit single board CPU. Based on the 2MHz 6809 8/16 bit processor, the 9600 offers state of the art board level processing for a wide variety of bus-oriented applications.

The single Eurocard size board offers user features including a timer clock, four DMA channels, memory management all running with the 2MHz 6809. The compatibility of the product with the Rockwell RM65 bus provides wide selection of hardware boards.

The processor is capable of addressing the full 1 Mbyte offered by the 6809. The system supports multi-tasking and up to 16 memory maps can be pre-defined and switched. Additional map may be held for loading during task switching.

Four DMA channels are fully implemented on the board, driving significantly bus arbitration and control circuitry for any peripheral board requiring DMA facilities.

Measurement Systems (CW), Mill Reef House, 9-14 Chapel Street, Newbury, Berkshire. Tel: (0635) 45420.

The Microncribe MT80 from Terminal Technology.

80-character display terminal launched

TERMINAL Technology has announced an 80-character display terminal, the MT80, is a standard cassette loaded daisywheel.

The cassette is designed to increase both speed of loading and the life of the wheel itself.

The MT80 cassette ribbon ensures simple and clean loading.

Brother daisywheel printers are claimed to dominate the low end of the US market and aim to capture a major share of the UK market this year.

Jones-Brother (CW), Office Equipment Division, Shepley Street, Audenshaw, Manchester M34 5JD. Tel: 061-330 6531.

The terminal weighs 500g, and measures 190 by 140 by 26mm.

Terminal Technology (CW), Clarence House, Clarence Place, Newport, Gwent NP7 7AA. Tel: (0635) 214289.

The terminal can be downline loaded, with special function keys to call up frequently used subrou-

Battery power for portable computer

EPSON'S new battery-powered portable computer, the HX-20, is now available from Stonefield. No bigger than an A4 briefcase and weighing less than two kilograms, the HX-20 incorporates a printer, LCD display and twin CPUs.

Other features fulfilling within the basic price of just over £400 are enhanced Microsoft Basic, clock and 16K memory, with a built-in cassette drive available for an extra £75.

Because of its light weight and complete portability, Stonefield has selected the HX-20 as a suitable unit for use in industrial environments. A mini-micro communication board (RS232) can be linked to the HX-20, enabling Stonefield to supply a low-cost data logging system for many applications, especially those involving lengthy or complicated test — for example in electronic mail or information retrieval systems. Microscribes have been successfully linked to such databases as Telemac Gold and Dialog.

The terminal weighs 500g, and measures 190 by 140 by 26mm.

Terminal Technology (CW), Clarence House, Clarence Place, Newport, Gwent NP7 7AA. Tel: (0635) 214289.

The total CMOS system allows for data retention of the entire 16K of supplied RAM memory providing a powerful data storage capability.

Interfaces for serial printers,



Space-saving cabinet puts safety first

THE new Firemaster II fireproof side-filing cabinet can safely store a wide range of paperwork, says Datacare Business Systems.

The extra-deep drawers with adjustable width fittings can take printout, conventional and lever-arch files and have 50% more capacity than conventional filing drawers, the manufacturers claim.

Available in two or three drawer versions the Firemaster side-filer has undergone independent tests by the American Underwriters Laboratory showing that it provides protection of paper contents against a severe fire exposure reaching 1700°F for at least one hour and during an additional "sweat out" period without the interior temperatures reaching 330°F, the point at which paper starts to char.

An optional wooden top is available with the cabinet which comes in two or three drawer versions, turning it into a counter unit.

Datacare offers free replacement of any unit damaged beyond repair by fire.

Datacare Business Systems (CW), Chapel Court, Borough High Street, London SE1 1HK. Tel: 01-403 4671.



The Ordina 155 diskette safe.

Diskette safes pass test

FIRE is a major hazard to business. The consequences can be disastrous. Historically 50% of all organisations whose vital records are destroyed are liable to immediate collapse.

The system called Easy Feed stores up to eight stacks of different types of continuous stationery and holds the ends readily accessible and available for immediate use.

It consists of a trolley with eight trays, split four and four.

The eight sizes or types of paper are fed upwards through the centre.

At the top of the trolley the ends of

paper are gripped in the slots of a dispenser head from which any one can easily be released to facilitate printer feeding.

The trolley, pre-loaded with paper, away from the printer, is pushed into position and the specific paper required is released and loaded. During operation the printout is automatically delivered

into an integral stacking tray. A change of paper is easily made by tearing off the paper and feeding the excess back through the dispenser head, lightly clamping it ready for further use, and then selecting the alternative paper to be run.

Easy Feed can be used free-standing, pushed partly under the desk with the dispenser head and the stacking tray positioned in relation to the printer. Alternatively the basic unit without the stacking tray can be accommodated completely under the table with the feed coming up through a 500mm x 200mm slot.

Typically, a computer installation may need to process a large number of items such as listing paper, wage slips, bank giro, bank schedules, invoices, statements, letterheads and double labels, with all the problems of storage, operation and printout.

The storage capacities of both

safe ranges from 180 to 460 8in floppy discs and 410 to 1080 5 1/4in mini diskettes.

Phonet-Bauche (UK) (CW), 22-24 Marlborough Grange, London SE1 5JT. Tel: 01-733 5131.

Keeping the micro desk tidy

A COMPACT work desk, the Micro Tidy, to house all the equipment, paper and materials of the enthusiastic personal computer user, is now available from Abacus Marketing.

This purpose-designed unit, said to be suitable for the CBM 64, BBC, Dragon, Sinclair, Nasco and many other home computers is available on its recommended retail price

of £39.95 (inc VAT) or free standing with black powder-coated metal legs at £79.90 (inc VAT).

Micro Tidy, a British designed product, is manufactured by Cound Design Systems and is sold primarily through micro dealers.

Abacus Marketing (CW), Abacus House, 60 Barbours Way, Cound, W.R.11. Tel: (0935) 611161.

The Hushcover from Inmac.

Acoustic covers offer a quieter life

ing of the printer to the fan to ensure that should the fan stop, the printer will immediately cut out and prevent overheating. The cabinet is constructed from two layers of steel and packed with glass-fibre and mineral wool.

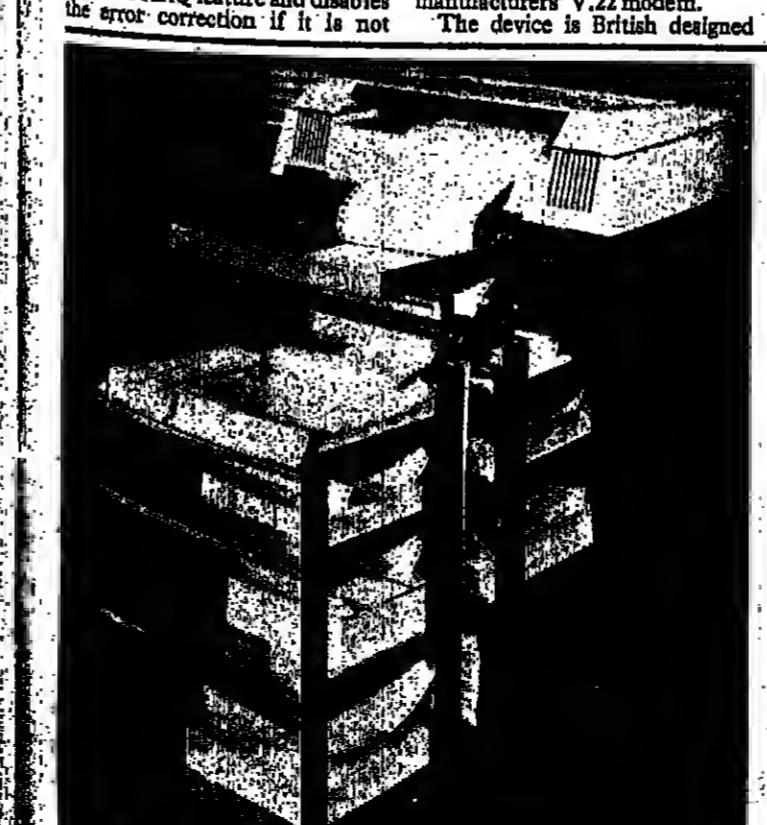
The lid is made from neutral-tinted perspex and is available in two versions, either domed for automatic paper feed or low profile and slotted for continuous feed stationery. Both types of lid have acoustic seals and gas struts for easy access.

The Hushcover, styled to blend in with most decors, is finished in chocolate and cream colours. There are three versions: the HC222 for tractor feed printers such as the Commodore 4022 or Old Microline 80 series costs £355; the HC333 for tractor feed printers such as IBM5256 or the Apple DP9000 costs £445; and the HC333M for printers with tractor feed attachment such as the Xerox 850 or Quint Sprint costs £495.

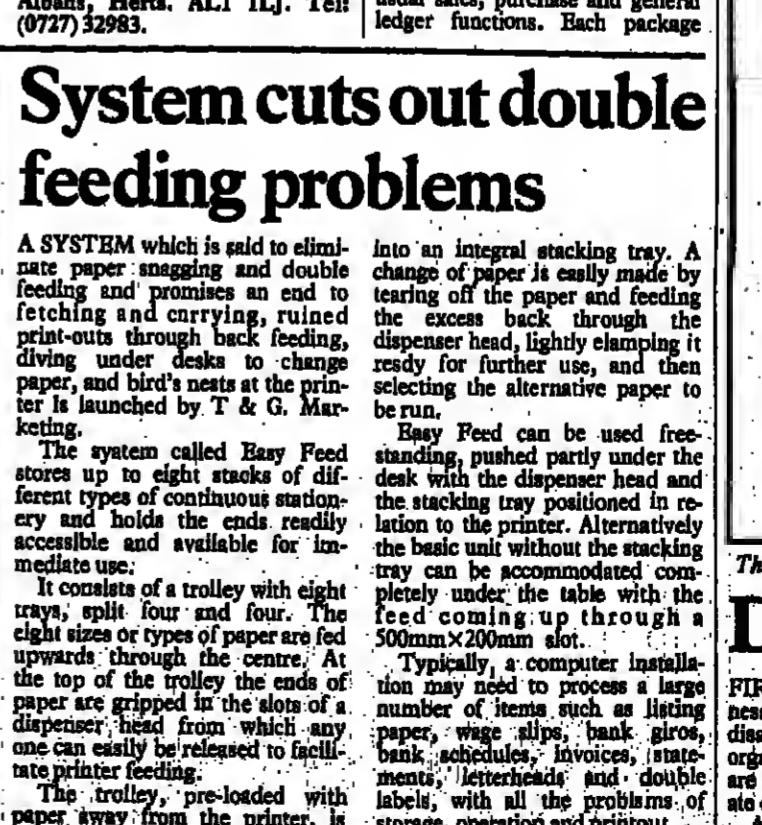
Inmac (UK) (CW), Dartford, Kent, DA1 1PF. Tel: (0925) 67351.

The Hushcover, styled to blend

The Easy Feed method of feeding continuous stationery.

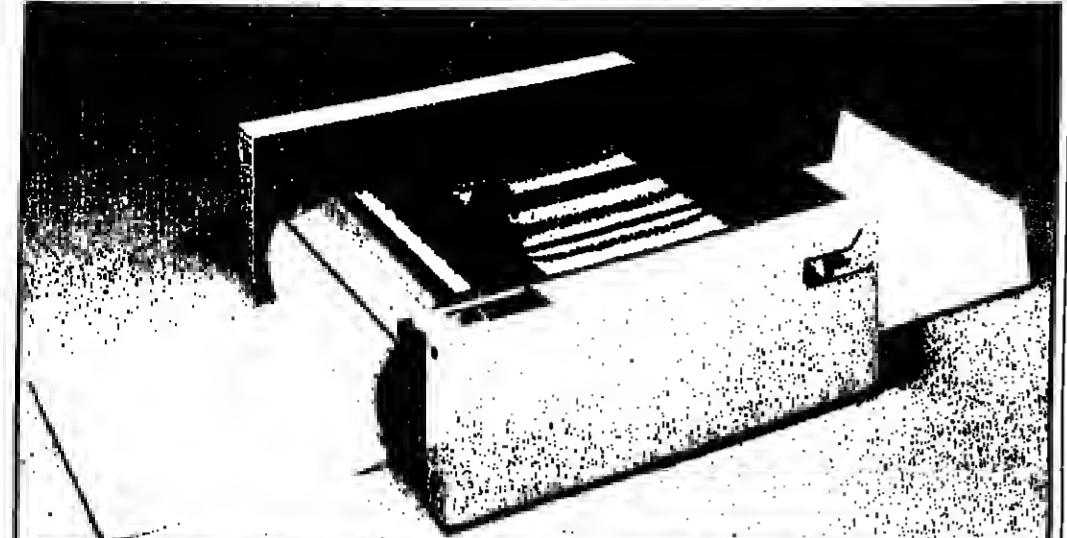


The Easy Feed method of feeding continuous stationery.



The Ordina 155 diskette safe.

PRODUCTS



The Model 9030 burner from Paper Handling.

Paper handling equipment for first-timers

WITH the release of the Model 9030 burner, Paper Handling claims it has brought form handling equipment within the reach of many first-time users. For a cost of £40 a week (plus VAT) the machine will burn paper up to 12in deep and 16in wide at 60ft a minute. Edge trimming facilities are also available at extra cost.

The equipment is made in Britain, and will appeal to the lower volume user of continuous stationery, say the manufacturers.

Paper Handling (CW), St George's Chambers, 15 The Forum, Stevenage, Herts SG1 1BS. Tel: (0438) 723278.

Controllers for PDP and LSI systems

MAGNETIC tape controllers for PDP-11 and LSI-11 computers have been introduced by MDB Systems. This new line is being introduced simultaneously with MDB's disc controller.

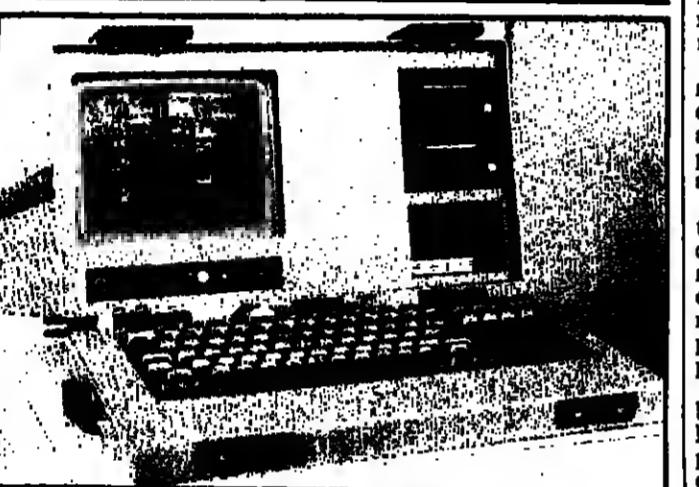
Don Perkins, MDB vice-president of engineering, describes the magnetic tape controllers as incomparably multi-featured. "They establish a new industry standard because they are system configurable through the operator console. This means that drive configurations can be changed or added without powering down the processor. Operator console select capabilities include controller addressing, bus levels, unit numbers, unit parameters and unit priority interrupts and vectoring," he said.

Designed to control any combination of modes and speeds on four drives simultaneously, the TM-11 compatible controllers interface NRZI, PB and combined NRZI-PB drives on a single board. They are transparent to DEC operating system drivers and diagnostics, are 16, 18 and 22 bit bus compatible and have automatic self-test on board.

The controllers feature a non-volatile static RAM to handle multiple tape drive speeds, densities and Unibus address modes. They configure RAM to standard values via firmware at initial power-up.

The new MDB Q-Bus tape controller model MLSI-TM11 is priced at \$2,600. Model MDB-TM11 for Unibus is \$2,950.

MDB Systems (CW), 1995 North Bristol Street, Orange, California 92665.



The Chameleon multi-protocol simulator/analyser.

Controlling the other end of the link

CHAMELEON is a portable protocol simulator that enables engineers developing data communications hardware or software to have a controllable "other" end of the link. Typically Chameleon would appear as a front end processor, a cluster controller or a data network, with the added advantage of total control so that abnormal situations can be exercised. It works in SNA/SDLC, HDLC, X25, BSC environments and can be user modified for hybrid protocols such as those used in military or banking communications and specifies multi-level data communications protocols.

To complement the simulation facilities, Chameleon provides monitoring capabilities. These will analyse and control user data in easy to read mnemonics in both industry standards (SDLC, X25 etc.) or user defined.

Chameleon will be marketed throughout the UK by Morden Electronics.

Morden Electronics (CW), Morden House, 579 Kingston Road, Raynes Park, London SW20 8SD. Telephone: 01-543 0077.

Intelligent identification system

THE Labelex Model 239 identification system introduced by Weber Marking Systems offers stand-alone or computer interface capability in label production through an intelligent microcomputer driving a matrix head printer specifically designed to handle labels.

This combination, says Weber, achieves high speed programmable label production of printed labels, copying bar code and/or alphanumeric data to a format selected by the user, without the need for masters.

Interface capability includes five RS232 serial lines plus video camera input and output (option), to support the host computer fully. The output capability is sufficient to handle up to four computer printers.

A NEW family of mini-floppy disc drives is introduced by Amlyn Corporation.

The Model 1560 drive provides up to 3.3 megabytes of unformatted capacity using double sided recording at a density of 9500 bits per inch at 170 tracks per inch over 160 tracks on each side of the diskette. Its interface is functionally compatible with that of Shugart Associates SA460 mini-floppy drive or its equivalent except that it has a 500 kilobit data transfer rate.

The data transfer rate for the 1560 and 1860 drives is 500 kilobits per second. The average rotational latency is 4.5 milliseconds with a track to track access time less than 3 ms. The average seek time is 8.5 milliseconds.

The Model 1860 drive provides up to 3.2 megabytes of unformatted data capacity using double sided recording at a density of

New forms manager for Vax series

DIGITAL Equipment has announced a terminal oriented data management system to help managers cut down programming, development and maintenance costs for a wide range of applications. The new software - which will complement Digital's other Vax-based forms manager Vax-11 FMS - will be of interest to managers interested in developing a teleprocessing environment, says DEC.

Called Vax-11 TDMS, the new product can, it is claimed, raise programmer productivity and lower costs by replacing major portions of the application programs with easy-to-use program-independent definitions for screen formats and application program data mapping.

Vax-11 TDMS software is intended for forms, data records, and data exchange in the Vax-11 Common Data Dictionary. Most changes to these definitions can be made without affecting application program logic, resulting in easier program maintenance.

The new software is supported by Vax-11 Dataview procedures. It provides transparent application program/data mapping and conversion with existing Vax-11 RM file services, Dataview, and Vax-11 DBMS database management record definitions.

Vax-11 TDMS includes a number of new features. A screen editor defines forms, which govern the appearance of the terminal screen during execution. Definitions include cursor control, scrolled areas, explanatory and "help" text, highlights and other, video characteristics.

The screen editor can also define field validation criteria that restrict the kinds of data that a terminal operator is permitted to modify. Most field editing and data validation functions are handled by screen definitions.

TDMS incorporates a language of powerful, non-procedural expressions called Requests. These expressions specify the exchange of data between terminals and data files: a simple Request identifies a form to be displayed and the data fields to be collected and/or displayed on the form. More complex Requests may include conditional instructions and automatic handling for scrolled areas.

Chameleon will be marketed throughout the UK by Morden Electronics.

Morden Electronics (CW), Morden House, 579 Kingston Road, Raynes Park, London SW20 8SD. Telephone: 01-543 0077.

Floppy family launch



The microcomputer and printer which make up the Weber Labelex Model 239 identification system.

Weber Marking Systems (CW), 20/21 Market Place, Watford, Herts, WD1 1RL. Tel: (0923) 222222.

APPPOINTMENTS

Computer Weekly Classified Department
Quadrant House
The Quadrant
Sutton
Surrey
SM2 5AS
Direct: 01-861 8080
Consultant: 01-661 8787
Telex: Comwre 892094 BISPRG G

Direct Client Sales
Sales Manager
Shobhan Gajjar
Field Sales
Manager
Mike White
Consultant Sales
Assistant Manager
Julie Hannelord-McInally

Regional Offices
Birmingham
Vic Shere
021-356 4838
Manchester/Glasgow
Owen Kelly
081-872 8861
Production
Steve Lever
01-661 3104

General copy deadline
3.30 pm Monday prior to
Thursday publication
Senior Appointments
4 pm Friday prior to
Thursday publication
Colour deadline
4 pm Friday prior to
Thursday publication

Rates
£33 per s.c.
Quarter page
19 x 3 cols. £1470
29 x 3 cols. £2436
Full page
39 x 6 cols. £4568

Box no. £5 extra. Address back to c/o Computer Weekly, Classified Dept., Quadrant House, The Quadrant, Sutton, Surrey, SM2 5AS

Knight

OPERATIONS

BURROUGHS

Experienced small, medium and large range Burroughs Operators are URGENtLY required for long contracts and permanent positions in various areas. Ring for immediate starts.

SIEMENS

7760/7571 Operations personnel with 2 years BS2000 experience required for forthcoming OVERSEAS contracts. Excellent remuneration.

WE ALSO NEED:

CONTRACT

HP 3000 - MPE - WALES

ICL ME29 - TME - LONDON

ICL 2904 - EXEC - SCOTLAND

ICL - GII+ - LONDON + HANTS

For further information contact: Lorna Fraser or Ken Lynn 01-491 4706

HUNTERSKIL SOUTH ALSO REQUIRE URGENTLY

CONTRACT IBM DASD MANAGER

3 months + contract in Surrey using DMS to set up and document a space management system under MVS. Must have track record.

HP 3000 MPE/4 OPERATOR

Immediate start, location Berks.

A team of 4 MVS JES2 OPERATORS

Long contact therefore ideal for first time contractors and/or those who have worked together before. Based Berks, start Sept.

Contact Nick Gill on (0628) 75551
Chatsworth House, The Broadway, Maldenhead Berks, SL6 1LY.

Knight

Knight Computer Services Limited

(Recruitment Division)

14 Old Park Lane, London W1Y 4NL

8th Floor, The Computer Services Building

Licensed as an Employment Agency

01-491 4706

24 Hours

HUNTERSKIL

The HunterSkil Group

The Boots Company PLC

Develop your Career in Micro Technology

'Calculators for all' was one of the accomplishments of the 1970's. Computers for all will be one of the achievements of the 80's. The size, cost and power of micros makes their impact inevitable. The challenge for computer people is to develop the products and systems the market demands.

Digitus is building a micro systems company with the best equipment, software and people we can find. We need men and women with technical skill who can develop interactive systems, train users and implement multiple

micro projects. Some knowledge of micros is desirable together with minicomputer experience in:

- BASIC, COBOL, PASCAL, FORTRAN, C or Assembler
- Office Automation, Commercial, Management Science or Control Systems
- Unix, CP/M, MS DOS, RSX, RDOS, DBMS or Comms software

Applicants should be resident in London or the Home Counties. There are also a few openings for computer science graduates.

PROGRAMMERS · DESIGNERS · PROJECT MANAGERS

Digitus specialises in the practical application of micro technology. The Company markets a range of microcomputers from single user 16-bit machines to multi user and multi processor 16/32-bit machines and networks. Services include: tailored software, training, engineering, consultancy and turnkey systems. Applications include: electronic mail, information management and wordprocessing, modelling, statistics, graphics, critical path, linear programming, order processing, accounting, stock control, insurance, banking, stock broking, personnel, membership, mail order and public information systems.

If you want to develop your career in new technology systems please send C.V. illustrating your project experience to:

Alan C. Wood, Managing Director, Digitus Limited,

10/14 Bedford Street, Covent Garden, London WC2E 9HE.

Telephone 01-379 6968.

Digitus

SENIOR APPOINTMENTS - £14K +**SYSTEMS SOFTWARE****ANALYST/ PROGRAMMER**

CONTINUOUS PROCESSING

c.£15,000 AND CAR

CITY BASED

A vendor of worldwide renown has recently launched a new range of Continuous Processors in competition to TANDEM and CTL MOMENTUM.

This is an excellent ground-floor opportunity to join them while the Division is still in its formative stages.

They are seeking a young person capable of a multi-faceted role with a heavy technical content and a great deal of customer interfacing. Pre-sales involvement will include help on proposals, demonstrations and presentations. Candidates with experience in some of the areas listed below should identify well with this position:

- ★ Good real-time on-line systems software
- ★ TANDEM, DEC, PRIME or DATA GENERAL equipment
- ★ COBOL or other applications, software languages
- ★ Communications and/or database software

Please contact BOB BOWER for further information

Ref. CW2107/1

Hutton
SPECIALIST RECRUITMENT CONSULTANTS**SENIOR SYSTEMS CONSULTANT**

OFFICE AUTOMATION

TO £18,000 AND CAR

CITY BASED

MAJOR ACCOUNTS

This important position has been created to complement the existing Marketing Group. It is primarily concerned with all areas of pre-sales support covering the U.K. An average of two/three days' a week will be spent out of the office with periodic trips (approximately five days every two/three months) to the Company's H.Q. in Europe.

Requirements include a good understanding of OA and current products available, for both central and distributed systems. Experience of implementing OA systems (Wang, IBM, DEC, etc.) while employed by a systems house or manufacturer is highly valued and a knowledge of OA/DP integration requirements preferred. Candidates should be educated to Degree/HND level.

Please contact BOB BOWER for further information

Ref. CW2107/2

Hutton
SPECIALIST RECRUITMENT CONSULTANTS**SALES - IBM PLUG COMPATIBLES**
CITY BASED

In this highly competitive market place, excellence of equipment and keen pricing policy are two very important factors. Our clients are a huge multi-national with perhaps the largest range of information processing hardware and systems available today. A division of the Organisation specialises in IBM plug compatibles where their price/performance advantage is of great benefit. Important sales vacancies have been created in two areas:

4300 SERIES AND ABOVE

OTE £30,000+ AND CAR

To sell a range of compatible processors for database, communications and interactive applications, fully compatible with the most advanced operating systems such as VM/SP, DOS/VSE and MVS/SP using the most advanced VLSI/VSI technology.

3270 DISPLAY SYSTEMS CONTROL UNITS DISPLAYS AND PRINTERS
OTE £20,000-£24,000 AND CAR

To sell a unique interactive display system using the latest micro technology, creating total flexibility including ISIC, SDLC/CSNA systems.

ONLY EXPERIENCED PCM SALES EXECUTIVES NEED APPLY FOR THE FIRST CATEGORY. BRIGHT S.E.s WITH SALES POTENTIAL MAY BE CONSIDERED FOR THE SECONDO.

Contact BOB BOWER, quoting reference CW2107/3 for further information.

Ref. CW2107/3

Hutton
SPECIALIST RECRUITMENT CONSULTANTS**SENIOR APPOINTMENTS - £14K +****Promote Your Experience...
...into Consultancy**

You have five years experience, or more mostly gained in a systems development environment.

You have worked in Banking or Insurance, on the development of on-line applications, using database.

Or, your background is in another application field in which you can offer strong competence. You are a brilliant Designer, a skilled Analyst, a successful Team Leader.

If your experience includes IBM mainframes, H.P. 3000, Tandem, Honeywell, VAX or Data General, it is a definite advantage.

You have a mature personality, sound interpersonal skills and leadership potential. You are aged 28 to 40, educated at least to 'A' level or equivalent, preferably with a degree or professional qualification. You now want more business and technical variety within a systems development environment.

You want to move into consultancy to communicate your expertise to client users.

You want to get to the top of your profession by learning the techniques and skills of a top consultancy.

Such an opportunity is open to you through the new vacancies created in the Systems Development Division of an International Consultancy. Our Client has an enviable reputation in the field of Information Systems consultancy and Training and can offer the challenge to rise to project management and consultancy.

Contact Renée Nute on 01 935 0671 or 01 874 6372 evenings and weekends, or send your C.V. to her at the London address below.

(4952)

**Analysts
Designers
Team Leaders****£13,000 - £15,500
+Car+Bonus for
Senior Positions****London**

Technical, Sales & Management Appointments

Hutton
SPECIALIST COMPUTER RECRUITMENT LTDSOUTH: James House, 46 James Street, London W1M 5HS, 01-835 0671/486 0461
MIDLANDS & INTERNATIONAL: 35-37 Great Charles Street, Queen's Way, Birmingham B3 3JY, 021-236 3781
NORTH: International House, 84 Oceanside, Manchester M3 2ER, 061-833 0427
BELGIUM: Avenue Louise 327, B-1050 Brussels, 010 322-840 7151/71
HOLLAND: Willemsparkweg 92, 1071 H M, Amsterdam, 010 3120-780947

Systems Professionals

Looking for your first career move?

Your first move is probably the most difficult one you'll ever make. You can't afford a mistake, but how do you know you're choosing the right company?

We are convinced we've found them. Our client believes people are their strength and their commitment to their people is wholehearted. In their purpose-built development centre, you'll find both the tools and the backing to develop your skills to their maximum potential—and you'll learn those new skills you need to become involved in projects at the very forefront of technology.

Because of their policy of continued expansion our clients are now seeking dedicated professionals in the following areas:

- Office communication systems • Data communications
- Local and wide area networks • Software tools

Applicants should have a degree in computer science, electronic engineering, or a similar discipline, and a minimum of two years' development experience in real-time applications.

For further information about these positions please contact Edith Watson at Computer Search and Selection, Hamilton House, Marlowes, Hemel Hempstead, Herts HP1 1BB. Tel: Hemel Hempstead (0442) 40761.

Systems Programmers and Consultants

For the development of systems tools and utilities, including the provision of a portable toolset based on the UNIX operating system. IBM or VAX background preferred, and a knowledge of 'C' or PL/M would be an advantage.

Software Engineers

To become part of a team currently developing office communications and networking software for Z80 based microcomputers.

PL/1 Programmers

To customise generic systems software for PABX applications. Knowledge of MVS essential. Experience of IMS or SPF would be an advantage.

Team Leader, Engineering Development

The successful applicant will be responsible for a team of up to 6 hardware engineers. You should have a minimum of 5 years' development experience and a sound appreciation of both hardware and software, particularly in INTEL or Z80 based systems.

Hardware Engineers

For a variety of applications up to and including the prototyping of new products. Some software knowledge would be an advantage.

CAD SOFTWARE ENGINEERS

Following the highly successful launch of the Artworker CAD system for the design of printed circuits, Wayne Kerr Detum Ltd. are seeking additional Software Engineers to further strengthen the design team.

These well rewarded positions offer challenging work and excellent opportunity in an exciting market.

Applicants should apply to:

Wayne Kerr Detum Limited
Woolborough Lane
Crawley Industrial Estate
Crawley, W. Sussex
Tel: 0293 543266**Imperial College of Science and Technology
Administrative Computing Development Officer**

The College is in the process of expanding its administrative computing services in order to establish a set of unified data bases around which the software packages required by Central Administrative Sections can be expanded or developed. An important additional requirement is to develop a management information service for senior management. The College has a student population of 4,700 and a staff of 3,000.

An experienced manager is required for the development and direction of this project. Candidates should have experience in the design and use of data bases for administrative purposes. Proven success in the management of small software teams and in the development of structured, fully documented software is important.

Appointment will be made in the salary range £13,515 to £18,825 per annum plus £1,188 London Allowance.

Further particulars and application forms are available from the Personnel Secretary, Imperial College of Science and Technology, London SW7 2AZ, to whom applications should be submitted by 12 August 1983.

Ref. CW2107/2

RECRUITMENT CONSULTANTS

starting package from £15,000 + Car

WINDSOR & MUNICH

Kramer Westfield is a small, effective, specialist consultancy providing expertise to high technology clients. Demand for our services has resulted in the need to augment our team by the appointment of two new consultants, who will focus on the semiconductor and communications market sectors.

The role of consultant is a demanding one, requiring a blend of communication skills, creative ability and the capacity for hard sustained effort. Handling assignments for top UK and European management means the need for personal credibility and influence is essential; a sense of humour also helps!

If you are aged 25-35, currently in recruitment or high technology sales/engineering and would enjoy the rewards of operating within a small, close-knit team then we would like to hear from you. You will receive a high base salary, attractive bonuses, company car, private health scheme and work from prestigious new offices.

Applicants, male or female, should contact Martin Warner or Paul Child on Windsor (0753) 56155 or 04868 7403 evenings and weekends, or write to Kramer Westfield Associates Ltd., 23 Victoria Street, Windsor, Berks SL4 1HE.

Kramer WestfieldFOR
CLASSIFIED
ADVERTISING USE
DIRECT LINESRECRUITMENT CONSULTANCIES
(01) 661 8787DIRECT ADVERTISERS
(01) 661 8080**SOFTWARE ENGINEERS FOR HOLLAND**
Experience in any of following: Data Comm, BSC, SDLC, 3270, 8086, 8088 or 8090.

Short- and long-term contracts are available up to £600 per week. We will also have a requirement for a

TECHNICAL WRITERIn a few weeks. Salary similar to above.
Send your c.v. to:
MICROSYSTEMS ENGINEERING LTD.
8 South Tay Street, Dundee, or
Telephone Amsterdam 237345 for further information**Computer Search & Selection**

Engineering Manager

Advanced Portable Micro Computers

Southern Based

c£15,000+Car+Benefits

A multi-million dollar turnover corporation is enjoying considerable success in North America with a product acknowledged as an industry leader. It is recognised as the world's most powerful, portable IBM P.C. compatible micro computer.

To further its worldwide growth the Corporation has recently formed a European subsidiary with exclusive distribution rights to this most advanced computer and wishes to maintain its reputation for reliability and quality control gained over many years as a responsible manufacturer, supplier and innovator of new products.

The Organisation now seeks to appoint an experienced Engineering Manager from within the micro computer/personal computing industry to assume direct responsibility for quality assurance and warranty, during a period of predicted growth, where, reporting to the European Technical Manager, the individual will organise product quality control, test, warranty, service and maintenance standards and operations.

Your background should include sound engineering

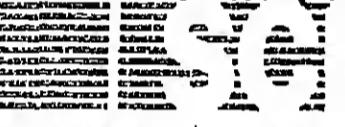
management and technical experience in micro computing where ideally you will have been directly involved in quality control, warranty costing and negotiating dealer service and maintenance contracts.

This is a rare opportunity to manage and instigate reputable standards, where future personal and career growth is considerable within such a high technology group and therefore demands dynamic and ambitious individuals.

To be considered against this new opportunity, please contact our Advising Consultant Roger Dorrington on 01-935 0671 (24 hour answering service) or submit your Curriculum Vitae to him at the London office address below.

Your application will be treated in strictest confidence and you are assured of a prompt and relevant reply.

Technical, Sales & Management Appointments



Specialist Computer Recruitment Ltd

SOUTH
James House, 46 James Street,
London W1M SHS
01-936 0671/466 0481

MIDLANDS & INTERNATIONAL
35-37 Great Charles Street,
Queensway, Birmingham B3 3JY
021-238 3781

NORTH
International House, 84 Deansgate,
Manchester M3 2ER
061-833 0427

BELGIUM
Avenue Louise 327
1010 1050 Brussels
010 322-840 7151/71
HOLLAND
Wilhelmsparkweg 92
1071 H M Amsterdam
010 3120-750947

SYSTEMS MANAGER/PROGRAMMER **BEDS** **c.£8-11K+CAR**

International Company situated in rural Beds. are seeking a Systems Programmer to be responsible for technical support functions. The candidates will have an extensive DEC, PDP background under RSTS/E using BASIC + some FORTRAN and MACRO experience.

HEALTH CARE/MUMPS SALES SUPPORT **BEDS** **to £13K+CAR**

Leading European Software House with offices in UK, Europe and the Middle East are seeking an A/P with experience of Health Care Systems using MUMPS on DEC Hardware. Experience of Radiology and laboratory administration is advantageous.

IBM PROGRAMMER **HERTS** **£7-9K**

Our client, a market leader is seeking an IBM Programmer with experience of DOS/VSE Batch and on-line work. Candidates will be part of a small team working primarily on stock control systems.

SENIOR ANALYST **N. LONDON/S. HERTS** **to £15K**

Successful and expanding bureau are seeking a general commercial Analyst with at least five years' solid experience of systems. Candidates will have taken at least two projects from feasibility to implementation. PRIME experience a definite advantage.

PROGRAMMER ANALYST **HERTS** **£12K**

A leading manufacturer of domestic products utilising twin 34s is seeking a programmer analyst with at least three years' RPG II systems 34 experience. Our client is currently reviewing its financial systems with a view to redevelopment.

BASIC + 2 or BASIC + PROGRAMMER **HERTS/BUCKS** **c.£8K**

Two enterprising installations are seeking programmers with RSTS/E experience preferably with RMS. Applicants will be working on general Commercial Systems within small teams. Company progression and benefits are excellent.

RPG II/III PROJECT LEADER

A major International company is currently setting up a team to develop distribution and finance systems for its European divisions. They need a candidate with extensive GSD experience to be based in the UK with trips to mainland Europe.

IDMS DATABASE ANALYST

A successful construction company working mainly in the Petrochemical Industry has a requirement for an Analyst with a good knowledge of IDMS. They are running an IBM 4341 under MVS with TSO/SPF but will consider candidates from other hardware backgrounds.

IBM ANALYST PROGRAMMER

A multinational company manufacturing and distributing office equipment is developing order processing systems on IBM mainframes. They are seeking an A/P with about three years' experience including some COBOL on IBM to work on systems from feasibility to implementation.

ICL SENIOR PROGRAMMER

Part of a International engineering group, this company is involved in the developing distribution systems on ICL 2900s. They require an applicant with at least two years' COBOL to be involved in systems from design to commissioning.

DEC ANALYST PROGRAMMER

This company provides turnkey systems based on DEC hardware. Due to continuing expansion, they require candidates with at least three years' experience on PDP 11 or VAX to work both in-house and on customer sites.

SENIOR CONSULTANT IBM

A service organisation of a multinational having diverse interest working mainly on IBM mainframe systems needs a candidate with extensive DP experience including some IBM and accounts/ledgers experience. Must display excellent communications skills and have a desire to play a major role within the development division.

MIDDX. to £20K

MIDDX. c.£13.5K

MIDDX. to £11K

MIDDX. c.£9K

MIDDX. c.£12K

MIDDX. c.£15K+CAR

For further information contact Nick Lewis (Middx position) or Chris Chahade (other positions).

HOWLETT COMPUTER SERVICES

FREEPOST
Leighton Buzzard
Beds LU7 7BR
Telephone 0526 362555 (3 lines) or 028 872 221
(evenings/weekends)

Systems Analysts

Berks to £18K

A large group manufacturing consumer products requires high calibre analysts with a minimum 3 years' experience of project development from initial investigation to implementation with blue chip organisations. Age range mid 20's to early 30's. Good degree essential. Relocation package. Exceptional prospects. Ref. 737

Systems Analysts

Berks to £13.5K+

A major group operating with a heavy investment in a growing IBM mainframe network seeks several analysts to help develop new marketing, manufacturing and accounting systems. A strong IBM background and experience of on-line databases is required. Excellent benefits and prospects. Relocation assistance. Ref. 734

IBM A/Programmers

Berks £10.5-16K

The services division of a manufacturing group require analyst programmers aged 25-32 years for a support function involving client liaison and systems enhancements. Previous analysis and a minimum 2 years PLT or Cobol experience required (IBM preferred but not essential). Excellent benefits and prospects. Ref. 737

IBM Systems Programmers

South West £10-14K

Leading financial services organisations seek IBM systems programmers with a minimum of 2 years DOS VSE or MVS experience plus CICS and preferably DL1 knowledge for systems support of major new developments. Substantial benefits and good prospects. Relocation assistance. Ref. 671

White or telephone:

London West Computer Recruitment
Evergreen, Dauntsey, Chippenham,
Wiltshire SN15 4JA
Telephone: (0249) 891114

(4747)

SOFTWARE ENGINEERS

Dorset coast

815

Our buoyant mood stems from important new orders won in both UK and overseas markets for our advanced telecommunications and computer controlled urban traffic systems.

We now wish to recruit qualified engineers at various levels in the following areas.

PACKET SWITCHING, DATA NETWORKS, SPC, TELEX SWITCHING SYSTEMS with Distributed Processing architecture and TELETEX CONVERSION FACILITIES, a revolutionary microprocessor controlled VEHICLE IDENTIFICATION SYSTEM for a new road traffic application.

A substantial investment programme is providing the latest software facilities for the efficient design of new product systems. Engineers who join us now can expect to gain valuable experience. We wish to make the following appointments:-

PROJECT LEADERS

These posts will suit experienced real-time Software Design Engineers who wish to make a career move towards management. They will be involved on the technical issues from system design and specification through to acceptance testing, and exercise leadership and control over groups of software engineers.

DESIGNERS AND ENGINEERS

There are vacancies to suit those with several years' real-time engineering software design and implementation experience.

A background in any one of the following would be an advantage but is by no means essential. CORAL 66, C, PLM, ASSEMBLER, INTEL 8086/80, DEC VAX 11/780, DEC PDP 11 (RSX 11M), UNIX, X25 PROTOCOLS, NETWORK MANAGEMENT, CAD.

Salary is negotiable and a generous relocation package will assist your move to a delightful part of the Dorset coast, where housing is reasonably priced.

To apply either telephone Poole (0202) 675161 (ext. 2028) between 9am and 5.30pm until July 28th quoting reference CWP/632 or fill in the Quick Response Coupon and post to Glyn Griffiths, Plessey Controls Limited, Sopers Lane, Poole, Dorset BH17 7ER.

OPLESSEY

QUICK RESPONSE COUPON

CWP/632

Name _____ Age _____

Address _____

Tel. Day _____ Evening _____

Present job title and nature of work _____

(Continue on separate sheet if required)

Software engineering experience (years) _____

Name of present employer and present salary _____

(If you wish to state)

I am interested in (posts applying for) _____

(4678)

LUCR

London West Computer Recruitment

Honeywell Analysts, Programmers

Wilts to £14K

A large data centre servicing a group of companies has requirements for staff with a minimum of 18 months' Honeywell Level 66 or DPS 8 experience to help develop a wide range of on-line database applications. Relocation assistance. Ref. 506

RPG II/III A/Programmers

North Hants, Glos £ negotiable

Financial services and manufacturing companies wish to recruit programmers and analysts/programmers for IBM System 38 installations. A minimum 12 months of commercial applications RPG programming experience on IBM S/34 or S/38 is required. First class opportunities with excellent salaries. Relocation assistance. Ref. 787

Project Leader

West London to £12K

UK subsidiary of large US manufacturer seeks a project leader/business analyst/programmer to develop a range of financial and distribution systems on IBM Series 1 linked to an IBM mainframe. Good Cobol experience is essential; RPGII desirable. This position reports directly to MD. Excellent prospects. Ref. 122

Senior Analyst

Wilts, Somerset £10-£15K+

Major companies developing a variety of military applications seek hardware design engineers with broad based experience in control systems/datalogging/instrumentation/automation or similar applications. Candidates aged 24-35 years; must have HND/HNC degrees and some software experience. Attractive locations. Good benefits. Relocation assistance. Ref. 750

Real Time Engineers

West, South, Wales £10-£15K+

Major companies developing real time applications in telecommunications, process control, telemetry, industrial automation and military systems require experienced team members and project leaders. Computer Science/Engineering degrees essential, plus assembler and/or high level real time language experience. Excellent benefits. Relocation assistance. Ref. 614

HOWLETT

COMPUTER SERVICES

CONSULTANT/ANALYST

LONDON

£11,000-£15,000

Our Client is a small but well established Software House with a number of prestigious companies using their services. Their packages, based on the PICK operating system, are widely used in both the international and home markets. To maintain and increase their high standards of operation they wish to appoint a Consultant/Analyst.

Applicants should have a sound DP background with exposure to either accounting, sales or manufacturing systems and have feasibility study and project management experience. They will probably be aged between 25 and 35 years, educated to degree level and be non-smokers. As there will be a high degree of client contact candidates must be professional in appearance and attitude. They must also be able to advise customers at all levels and present the results clearly and concisely.

In return our client offers an interesting and rewarding position within a friendly but professional team specialising in the PICK operating system and using fifth generation techniques. This is an excellent career opportunity to gain experience in a wide cross section of business applications in a pleasant and flexible working environment. For further details please contact Mike Harmer.

(4710)

Apex Computer Recruitment Ltd.

404 4821



London Office:
59 Grafton Road,
London WC1X 8TL.
Tel: 01-404 4821.

Brussels Office:
Rue Gatti de Gomond,
24, 1000 Brussels.
Tel: 010 322 377 4193.

Systems Programmer

£12,500 p.a. Add a little gloss to your career

ICI Paints Division is one of the world's largest manufacturers of decorative and protective surface coatings and our products have a wide range of industrial, commercial and domestic applications.

Throughout our operation we make extensive use of computers and at our Slough headquarters have an Amdata 470/V7 installation with 12 mb of memory and Memox and STC peripherals. The front end processor is a STC 3808 running under EP and NCP. Our teleprocessing network supports 200 on-line terminals in 10 paint distribution depots, two factories and several remote batch terminals and the Division is currently running MVS SP1 with CICS, Taskmaster, Adabas, Natural, Panzer, Panvel, Mark IV and other software.

We're looking for an experienced Systems Programmer, male or female, to make up a team of four responsible for the Division's basic software. You should have at least two years' relevant systems experience, a good

knowledge of VTAM, Assembler and MVS and some experience of defining MSNF and NJE links. Experience of 3808 software and teleprocessing systems would also be an advantage.

If you are looking for a really challenging career opportunity and a chance to develop your systems programming experience in a dynamic software environment, this could well be the opening you've been waiting for.

We offer a competitive salary, contributory pension scheme, profit sharing, subsidised staff canteen and excellent recreational facilities.

If you are interested please apply to Mrs. Jo Towers, Personnel Department, ICI plc Paints Division, Wexham Road, Slough, Berks. Tel: Slough 31161, ext. 3583.



MICROCOMPUTER BUSINESS SYSTEMS MANAGER

New chain of retail computer stores is setting up a Business Systems Division at large, luxurious new Hanworth (Middx) HQ. A man of exceptional ability and ambition is needed to create, develop and manage this division. Degree, business systems experience, 24-28, Ann.

(4748)

SUPER MINI MICRO INTERNATIONAL
Nth SURREY £10-£15K++
Leading international commercial service company is expanding its professional DP operation based on IBM System 34 Minis and Super Micros and is seeking to fill the following three additional positions:

Programmer (or Prog/Analyst)

Analyst
Senior Analyst

£10 some international travel (up to 25%) and have a keen and professional approach to justify a salary between £10-15K, then call us now to find out more!

Consultant Ref: 1003

£14-£16.50 (24 hrs)

£14-£16.50 (24 hrs)

AB EXECUTIVE (KINGSTON) LTD

FOR
CLASSIFIED
ADVERTISING USE
DIRECT LINES

RECRUITMENT CONSULTANCIES
(01) 661 8787

DIRECT ADVERTISERS
(01) 661 8080

Computer Service SYSTEMS DESIGNER

Up to £14,000

We are one of the leading local authorities in the introduction of Information Systems with an active professional department where high standards and training are key priorities.

We operate an IBM 4341 with DOS-VSE, CICS and COBOL. An IBM 3083E is planned for 1984. Personnel computing facilities are increasingly in use.

The majority of our work is new development, encompassing a wide variety of challenging systems, including finance, housing, libraries, planning and law.

We are currently seeking a Systems Designer for one of our three development teams. Reporting to the Project Manager, you will be involved in all aspects of project development including analysis and design, technical supervision and reviews, and implementation and documentation, using BIS Structured Methodology.

You should have a minimum of 5 years in Data Processing, preferably in an IBM environment, with at least 3 years' COBOL and some analysis experience. You should be able to communicate with both technical and user staff, and supervisory experience would be an advantage. A local authority background, while useful, is not essential.

We offer a competitive salary, 28 days' leave, interest-free season ticket loan after qualifying period, subsidised restaurant, flexible working hours and excellent training facilities. We are conveniently located in modern air conditioned offices close to Kensington High Street.

For further details ring Ken Betchelor on 01-937 5464 Ext. 336.

The Royal Borough of KENSINGTON AND CHELSEA

Application forms quoting Ref. CW/346 from the Personnel Service, The Town Hall, Hornton Street, London W8 7NX. Tel: 01-937 8582 (24-hour answering service). Closing date for applications 8th August, 1983.

Applications are welcome from suitable qualified disabled persons.

We need more assistance to tackle some knotty problems

Opportunities now exist within an internationally successful organisation to develop high technology display systems of their recently established division in Surrey. Whilst providing the security of a large company the division is small enough to operate autonomously having a young management team which has already created a friendly and dynamic work environment.

SENIOR ANALYSTS TO £12,500 PROGRAMMERS TO £11,000

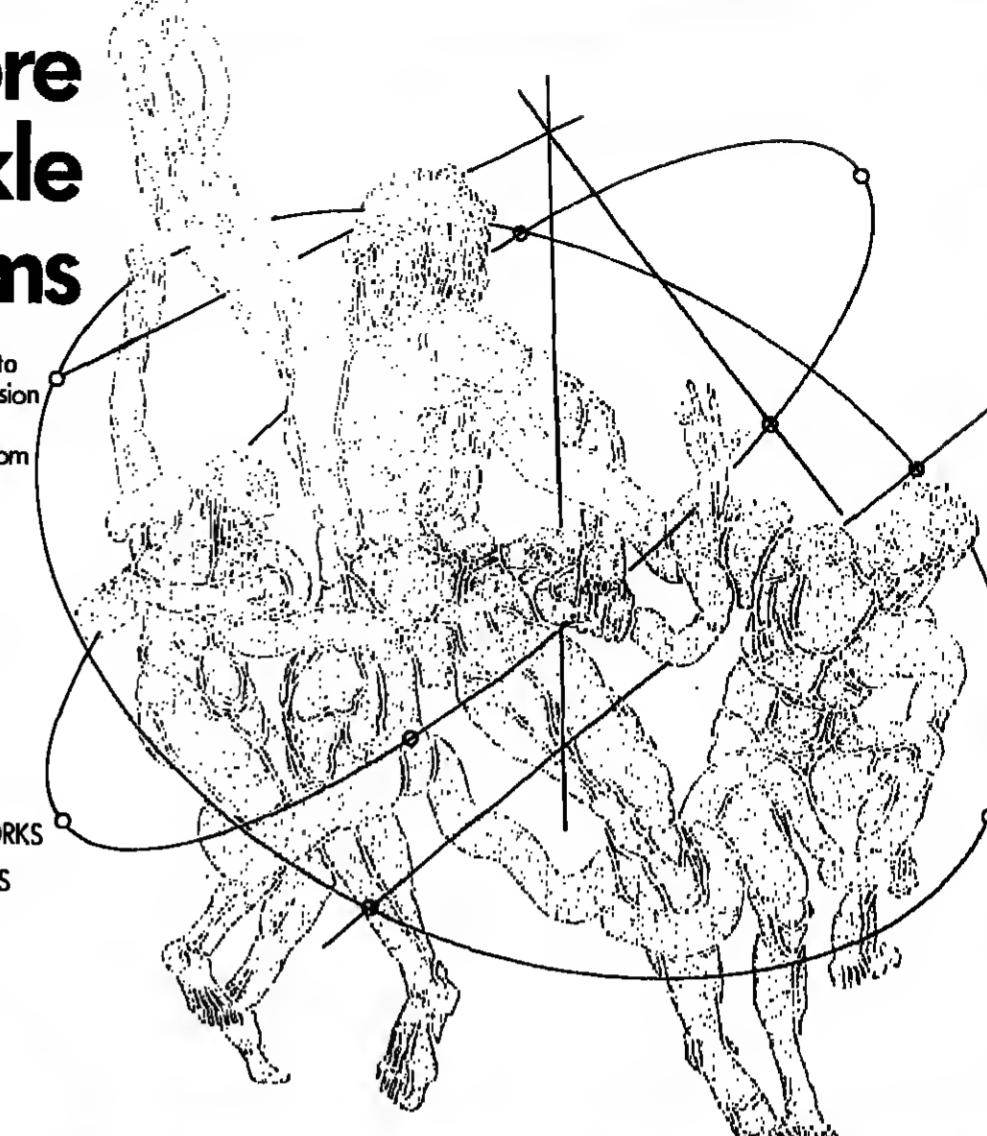
Young and enthusiastic Senior Analysts and Programmers are invited to join small highly creative design teams utilising the latest techniques on 8086/80286 micro processor hardware.

Ideally you will have experience in some of the following:-

HIGH LEVEL LANGUAGES
(RTL/2, PLM/86, CORAL)
REAL-TIME SYSTEMS
MULTITASKING, MULTI
PROCESSING EXECUTIVE
HOST/TARGET DEVELOPMENT
USING VAX 780

You will become involved with:-

LANs (ETHERNET)
X25 PACKET SWITCHED NETWORKS
DISTRIBUTED DATABASE SYSTEMS
RASTER GRAPHICS
GRAPHICS KERNEL SYSTEM
DIAGNOSTIC SOFTWARE



For further details regarding these vacancies please telephone in strictest confidence Miles Richards on 01-938 1804 (24hrs) or 01-847 2385 (7pm-9pm).



20 Kensington Church Street, London W8 4EP
Telephone 01-938 1804 Telex 22861

Want to work in SURREY, SUSSEX HANTS, BERKS or KENT?

Experienced in
COBOL, PL/1, RPG 3, FORTRAN or C
on

IBM, ICL, HONEYWELL
HEWLETT-PACKARD

or PRIME or any other computer?

Programmers, Analysts/Programmers and
Systems Analysts are urgently required

PHONE NOW!

Please telephone for further details
and an application form.

AMES PERSONNEL

8 CHART WAY, REIGATE, SURREY, RH2 0NZ
TELEPHONE: REIGATE (0737) 22219 or 22210

Top flight programmers

- Systems
- Applications
- Software

A Division of TRIAD Computing Systems Limited
based in Guildford, Surrey needs talented and adaptable
programmers to work on:

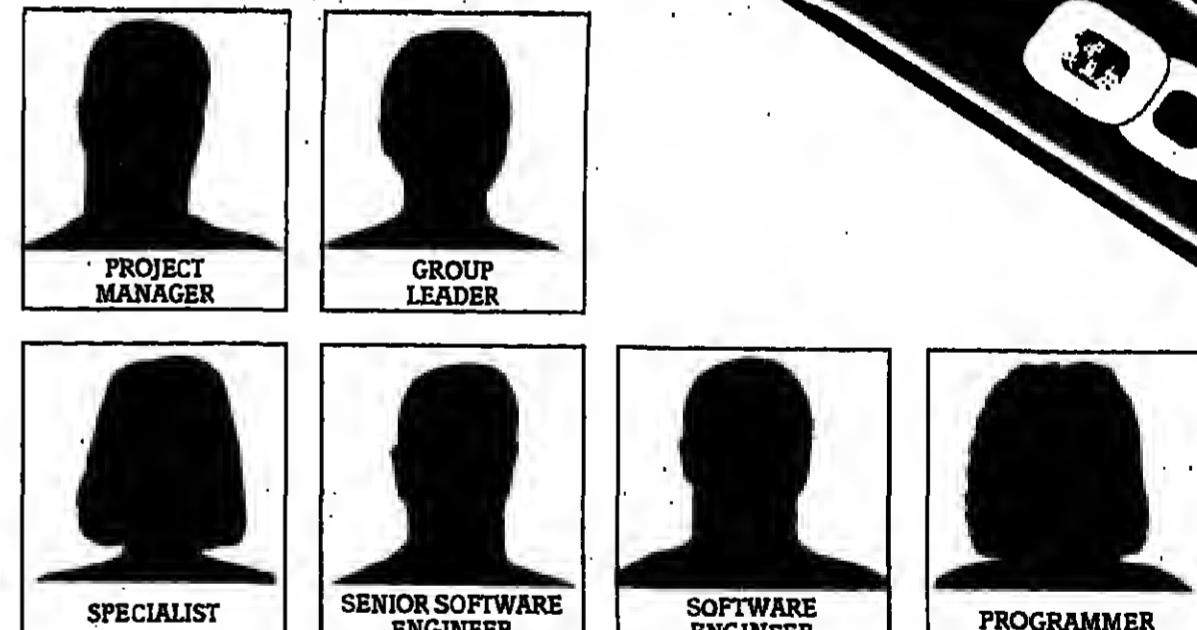
- real-time systems for industry and the public sector
- engineering and scientific applications
- basic software with special emphasis on database
and file management.

We are looking for people with high ambitions and offer rapid progress, on
merit, to positions of responsibility in systems design and project management.

Salaries to £21,000 p.a. plus bonus and usual benefits.

Write to: Manager, P.O. Box 1, TRIAD Computing Systems Limited,
108 Woodsbridge Road, Guildford, Surrey GU1 4PF. Telephone: 0483 37775

Software Engineers to £16,000



EXPERIENCE AT EVERY LEVEL

My client is a leading-edge technology contractor
designing and manufacturing a wide range of
systems and application software.

Their expertise extends across airborne,
underwater and surface based electronics,
supported by one of the most advanced real-time
programming establishments in Europe.

New contracts both at home and abroad
mean they now need more software experts to
join professional teams working on defence
radar projects, signal processing, ATE,
microprocessor techniques, software support

and quality assurance.
Opportunities exist at all levels from Programmer
and Software Engineers through to Section
Leader and Project Manager: ample proof of the
company's commitment to future growth.

Candidates should be qualified, preferably
to degree level, in a numerical or scientific subject
with a knowledge of FORTRAN, CORAL 66,
ALGOL, PASCAL, BASIC, M6800, M68000 or
ASSEMBLER. Current hardware includes GEC
4000 Series minis, VAX 11/780 and PDP 11.

Programmers to Software Engineers will
need 2/3 years good relevant experience.
Applicants for the more senior positions will have
5/10 years experience.

Salaries range from £7,000 to
£16,000 p.a. and a generous benefits package
includes 5 weeks holiday, contributory pension
plan; discount private medical scheme, flexible
and relocation assistance in appropriate cases.

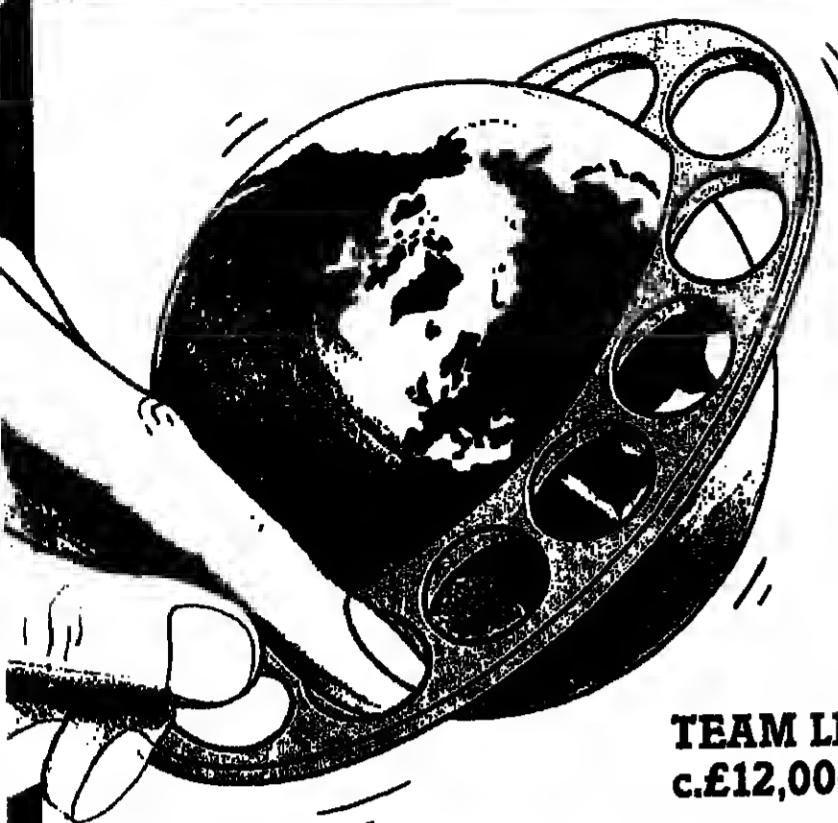
Long term career prospects are excellent.

For further information, please telephone,
call in or write with cv, quoting ref. W1039-M.

01-242 9356 OCC computer personnel

Recruitment Consultants, 16 Bedford Row, London WC1R 4EB

24 hour answering service



'WHEN IT COMES TO ADVANCED TELECOMM SYSTEMS — WE RUN RINGS ROUND THE REST OF THE WORLD'

TEAM LEADERS and SENIOR SOFTWARE ENGINEERS
c.£12,000 pa — £18,000 pa

This is an opportunity to work on one of the most advanced projects in the world. The development of this integrated telephony system is the result of the collaboration of a number of countries.

The work is varied and challenging. Working within a modern environment engineers utilise rigorous design methodologies. All team leaders and senior engineers are expected to lead by example, therefore experience of the application of high level languages in a telephony environment together with a mature and responsible approach are essential.

Initial training will provide the basic product knowledge to allow you to assume the responsibilities of a

team leader or senior engineer on telephony systems software design. Thereafter, there will be many opportunities to move within the project teams or the company itself.

The company is located within commuting distance from London or the rural home counties. Working in a professional environment you will receive a competitive salary, excellent benefits package and relocation assistance where appropriate.

To discuss these positions in greater detail telephone Marc Zundel on 01 938 1804 (24 hrs) or 01 602 0685 (between 7.30 p.m. and 8.30 p.m.) or write to us with full career details.



20 Kensington Church Street,
London W8 4EE. Telex 22861

SOFTWARE QUALITY ASSURANCE

To £14K

Berks

Our client, an international minicomputer manufacturer, is enjoying a dramatic growth in sales due to innovative design and exciting business plans. Continued success depends on exacting quality assurance of new software releases, and to this end we are recruiting an additional Senior Software Quality Assurance Analyst.

The successful candidate will be well versed in software quality assurance, have sound software systems and programming experience and proven interpersonal communications skills. He will also have software test plan development and execution experience with a software functional specification and design review background.

In return you will enjoy a challenging project leader position with a team of analysts, and the opportunity to grow with this continually expanding group.

For further details please telephone Keith Taylor at our Reading office (0734) 595346 or write enclosing a full C.V.

CONTRACTS

BUSINESS ANALYST
(PRODUCTION CONTROL EXPERIENCE)

SLOUGH

IBM SYSTEM 34 RPGII
ANALYST/PROGRAMMERS

LONDON

IBM COBOL IMS DB/DC
ANALYST/PROGRAMMERS

SURREY

IBM PU IMS DB/DC
ANALYST/PROGRAMMERS

LONDON

DC1 DESIGNER

SURREY

ADF PROGRAMMERS

SURREY

MCCOURT COUSINS LTD.

27-29 Greyfriars Road,
Reading, Berkshire
Telephone (0734) 595346 (24 hours)

For further details contact NIC POLAND TLP

A division of Tate & Lyle Industries Ltd.
Leon House, High Street, Croydon CR9 3NH

A member of the Tate & Lyle PLC Group

Telephone 01-666 5656

MARKETING MANAGEMENT WITH TOP BRITISH MICRO MANUFACTURER

EXPORT MARKETING MANAGEMENT

CIRCA £20K+ BENEFITS PACKAGE, OXFORD BASED

Research Machines' sustained growth is the result of a positive policy of designing, developing, manufacturing, and supporting high performance microcomputer systems in well-chosen market sectors.

This same policy underpins our plans for large-scale expansion in International markets.

We are now looking for experienced marketing executives capable of spearheading that expansion throughout continental Europe and the English speaking world.

Research Machines' product portfolio includes our very successful microcomputer systems 13802, Link 4802, and Chain Network, established computer-based products for education and training, and plans for an exciting new range of computer-based instrumental products.

As Export Manager you will take on responsibility for all aspects of marketing distribution, and sales of those products to the selected national territory. Your qualifications and experience will be taken into account when the territory is

Specifically your job will be to draw up, implement, and maintain the marketing plan for your territory by:

I Researching its market potential in terms of customers, competitors, products, and special requirements;

U Analysing, recommending, and

implementing methods of distribution and sales;

I Determining the appropriate level of sales and customer support to be provided by our UK sales office;

I Contributing to future product strategy in relation to the marketing opportunities provided by your territory.

The successful candidates for these important positions are likely to have:

A degree;

A background in product sales/marketing in computing, electronics, or instrumentation;

Overseas sales/marketing experience, particularly involving distributors and agents;

Proficiency in appropriate European languages;

Considerable personal initiative and negotiating skill, and a high degree of numeracy.

An interest in the educational market would also be a distinct advantage.

Salary is unlikely to be an obstacle and we offer a particularly attractive

25 days holiday, free return air, life and disability insurance, pension scheme; and generous help with relocation expenses.

If you are interested in this opportunity please contact: Polly Keane on Oxford (0865) 726136 or write for an application form, quoting reference: EMM/CW7.

RESEARCH MACHINES
MICROCOMPUTER SYSTEMS

RESEARCH MACHINES LTD, 146 High Street, Oxford OX1 1BW. Tel: 0865 726136. (4681)

ADVANCED SYSTEMS (UK) LTD SALES OR DP PROFESSIONALS FOR ACCOUNT MANAGERS (Sales)

£26K + BMW or equiv + benefits

1. THE COMPANY
Advanced Systems (UK) Ltd is part of a multi-national Corporation and leading producer of training products and services for the DP Industry with an annual growth rate in excess of 35%.

2. THE JOB

To extend and support the existing Customer Base by aggressively selling and promoting our extensive range of multimedia and computer-based training courses and related services.

3. THE PERSON

The successful candidate must be able to clearly demonstrate either:

A. A proven and successful record in executive level sales. Experience within DP or related industries would be an advantage.

B. The ability to successfully utilise extensive DP knowledge — gained whilst working as a DP professional (S/A etc.) — in a sales environment.

4. THE BENEFITS
An attractive compensation plan including a basic salary of five figures, car, expenses and benefits package.

To arrange an interview telephone:
Southern Office
Mr Tony Koch 01-822 3011
Northern Office
Mr Barry Farrow 061-228-0755

(14708)

CONTRACT ENGINEERS ELECTRONIC, MICROWAVE, SCIENTIFIC SOUTH COAST

Telephone Heather at KPG
on:
01-948 5922 or Havant (0705)
483228

(Evenings & W/ends)
(4685)

FOR
CLASSIFIED
ADVERTISING USE
DIRECT LINES

RECRUITMENT CONSULTANCIES
(01) 661 8787

DIRECT ADVERTISERS
(01) 661 8080

Telephone 01-666 5656

(4740)

REAL-TIME SOFTWARE DESIGN & DEVELOPMENT

When you try to get a deeper perspective
on work, does it all become a blur?

On face value C3 offers enormous challenge. Yet do you ever get the feeling that the deeper you look, the more obscure it all becomes?

Do you feel a stunning lack of satisfaction? Do you find limits not license on creative freedom? Do you find frustration not fulfilment?

A lot of Software Engineers do — they never see the full picture. Never put their contribution into context.

But they do at Scicon. Because we offer total involvement — from first concept to completion. Scicon have the distinction of being one of Britain's leading systems and software companies. A fact which should lead you to two conclusions:

1) No company gets to the top in this ultra-competitive service industry unless they have a very special skill to sell. Ours is multi-faceted.

We have, for example, developed systems for the oil industry, factory automation, message switching, motor racing and, last but largest of all, the M.O.D.

2) Clearly, there's no shortage of projects or scope at Scicon.

Right across the creative spectrum we need agile minds to develop some of the most complex real-time defence systems in Britain today — projects currently on the drawing boards involve:

- Developing the software for BATES, a major C3 system.
- Applying database technology to defence requirements.

There is, of course much more.

We're offering you the prospect of working in our refreshing free-thinking environment, playing a decisive role in small project teams, providing a technical consultancy service both in-house and directly to clients (throughout Britain and sometimes overseas). Salaries for these positions range from £10,000-£19,500 and benefits are, quite genuinely, the best in the computer services industry.

Get a perspective on the complete project for a change. Join a company that really is committed to individual training and career development. If you have experience in two or more of the following areas, try stretching your outlook and intellect with Scicon.

- C3 Systems ■ CORAL 66
- VAX/VMS ■ Database
- Real-Time Systems
- Project Management
- Computer Graphics

If you'd like to talk about your experience and how it could match our requirements phone Bob Lomas on: 01-580 5599 during office hours or on: 01-580 9955 between 5.45pm - 9.00pm. Alternatively write with a full cv to: Scicon Limited, 49 Berners Street, London W1P 4AQ. Interviews can be arranged outside office hours.

Scicon

(4688)

INTERNATIONAL TRADING COMPUTER OPERATOR

City

Our client is a subsidiary of a leading International trading group marketing an extensive range of commodities worldwide.

Major new development plans are underway, with mini computers currently in use, and the introduction of an IBM mainframe in 1984.

Our client offers a young ambitious operator, with up to a year's experience, an excellent opportunity to develop a long-term career in an international environment. A good benefits package is also offered. To apply, please telephone immediately, quoting ref: SA/1207.

Sue Armstrong,
Key Operations Assistant, Ltd.,
72 Dean Street, London W1.
Tel: 01-439 7651.

£6,500

(4476)

Rise to the challenge of Systems Development

The West Midlands Passenger Transport Executive is a leading Public Transport undertaking with a fleet of 2,000 vehicles and a total of over 6,000 employees. We have embarked upon an extensive programme of applications development, including on-line and database systems. We use an ICL 2988 running under VME 2900 and a 2960 running DME/Gaoga III. In addition, the Executive operates an ME 28 Minicomputer using TME. We are currently developing a complex telecommunications network based on Local Area Network technology designed to provide local processing facilities at sites throughout the West Midlands. The opportunity now exists for experienced computer professionals to work on projects within the development programme.

Technical Co-ordinator

£10,393 - £12,048

To control, co-ordinate and advise on the investigation, design and implementation of communications networks incorporating hardware and related systems. A minimum of 4 years technical experience in planning and implementing data communications networks is required, together with experience of ICL communications and RACAL equipment.

Senior Programmer

£9,240 - £10,794

To direct and co-ordinate a small team of programmers on the development and maintenance of a wide range of computerised systems. Additionally he/she will contribute towards the development of management information systems. A minimum of 3 years experience of COBOL and ICL hardware is essential and some experience of database applications would be useful.

Programmers

£8,571 - £10,006

To join a small team developing and maintaining programs for a wide variety of management and financial information systems, including Database applications. Applicants should have a minimum of 3 years experience of COBOL and ICL hardware; some knowledge of Filelab would be advantageous.

All posts are based in Central Birmingham and carry attractive fringe benefits. Job descriptions and application forms can be obtained from: Personnel Department, West Midlands Passenger Transport Executive, 18 Summer Lane, Birmingham B19 3SD. Tel: 021-622 5151 ext. 41. Closing date for receipt of applications 3 August 1983.

WM
West Midlands
Passenger
Transport Executive

(4702)

Management Services

The key to success

Our client is one of the world's leading manufacturers of high technology products. Considerable commercial success has led to sustained planned growth. An important part of future strategy involves strengthening the Management Services function, currently 25 strong, with two senior appointments. Both posts report to the Management Services Manager and require good communicators with the ability to manage and motivate.

Technical Support Manager

Supported by a team of Technical Systems Analysts, your responsibilities would include providing technical support on communications, database design, office automation, distributed processing and hardware evaluation. This would necessitate research and evaluation into new technology and, on occasions, the provision of a programming service.

Applicants should be graduates with experience in systems programming and/or database design, as well as previous management exposure.

Application Systems Manager

Supported by a team of Systems Analysts, your responsibilities would include the planning and control of systems projects, regarding time-scales and costs, interfacing with all departments involved, and with software houses. You would also be required to manage the design and documentation function and to initiate the changes required to ensure successful implementation.

Applicants should be graduates - or hold professional qualifications - and have previous experience as a systems project manager, systems manager or O&M manager.

The salaries offered will reflect the importance of these positions and will be enhanced by an attractive package of benefits, good working conditions and, where appropriate, relocation assistance. Career opportunities within our progressive organisation are exceptional.

Please apply with full personal and career details to Confidential Reply Service, Ref: BBM 8771, Austin Knight Limited, London W1A 1DS.

Applications are forwarded to the client concerned, therefore companies in which you are not interested should be listed in a covering letter.

**Austin
Knight**
Advertising

(4707)

THE ROGER PARKER ORGANISATION

HI TECHNOLOGY APPOINTMENTS

Chief Engineers, Group Leader, Software/Hardware Designers required by international Organisation. The company is in the business of electronic control and communications, and urgently needs to fill all of the more senior positions in the areas of Research, Industrial Controls, System 'X', Neutronics, Defence Systems. Relevant experience, degree standard will be ideal. Excellent relocation package, company benefits and competitive salaries, £15,000.

COMMERCIAL APPOINTMENTS

IBM, MVS/VM, SYSTEM PROGRAMMERS minimum three years exp. £16,000c
PROJ. LEADER - COBOL, IMS, management exp. preferred £17,000+
ANALYST/PROG. - COBOL, IMS/DB/DC, CLIST, ADF an advantage to £13,000
PROGRAMMERS - PL/1, MVS, TSO, Financial to £12,500
PROGS, COBOL, CICS, TANDEM, GUARDIAN, Banking £Neg

OPERATIONS APPOINTMENTS

OPERATIONS ANALYST - IBM, MVS, IMS, TSO, SPF, SMF, RMP (London) £11,000c
OPERATOR - IBM DOS/VSE, VM, 18 months' exp. (Cheshire) £7,500c
OPERATOR - CDC, NOS, 2 years' exp. (H. Counties) £A.A.E. £17,000+
OPERATOR - IBM MVS/JES 6-12 months' exp. (H. Counties) £8,500c
OPERATOR IBM SYST 34, Banking (London) £6,500c

CONTRACTS

SYSTEMS PROGRAMMER - IN DEPTH VM EXP. (London) £Neg
PROGRAMMER - HP3000, BASIC, MPE, QUIZ (London) £Neg
ANALYSTS (4) - Banking system, IBM background (H. Counties) £Neg

If your need is not listed above, don't worry, we have other vacancies on file.

PLEASE TELEPHONE CLIVE CHATTIN, OR SEND FULL C.V. TO:

4 LONDON WALL BUILDINGS, 8 LOMBARD STREET, LONDON EC2M 5NT
01-508 8161

(4810)

DATABASE PROGRAMMERS

Any Large Mainframe

If you have solid experience of programming in a Database environment you could help create a new database support team in Central London. Very competitive salary and company benefits in an expanding environment

IBM ASSEMBLER PROGRAMMERS

Financial/Commercial Systems

Applications programmers with 18 months + IBM Assembler experience will find excellent career opportunities and good salary packages waiting for them with our clients in the financial and commercial sectors

Contact: MARILYN DAVIDSON or
LESLY THOMPSON on 01-836 6775

Computer Personnel International
50-52 Southampton Street, London WC2 01-836 6775

(4810)

D.P. MANAGER LONDON WANG to £14,000

Our client is a large well-known international organisation involved in a wide range of business activities. At their London H.Q. they have recently made a substantial investment in a WANG VS 80/100 computer system which will initially be used for sophisticated word processing and accounting applications. They now wish to appoint a young Data Processing Manager to take responsibility for the computer function.

Applicants, aged between 25 and 35, should have a sound DP background with knowledge of Cobol and accounting systems. Any exposure to Wang, Datacomm or Word Processing would be of special interest. The successful candidate will be a highly motivated person who can respond to the company's emphasis on speed and quality of service, and who has the ability to plan and develop future DP and WP applications.

As well as an excellent starting salary, our client offers BUPA, pension scheme, 22 days' holiday and modern air conditioned offices which boast swimming pool, squash and badminton courts, sauna, restaurant and bar. If you are self-motivated and would enjoy working in a dynamic environment, contact Mike Harmer for further details.

Apex Computer Recruitment Ltd. (4828)

404 4821
Apex

London Office:
59 Grosvenor Road,
London WC1X 8TL
Tel: 01-404 4821.
Brussels Office:
Rue Galli de Gomond,
24, Uccle 1180 Brussels.
Tel: 010 322 377 4193.

USA

RECRUITMENT MANAGER

I'm taking up a new appointment within the Tangent Group and need to locate a replacement.

The job is to locate, interview, negotiate terms and relocate personnel on either a contract or permanent basis primarily to meet the demands of Tangent's USA Operations.

Based in Brentwood, Essex, you will have the full backing of the Resources Division.

I am looking for an individual with either a good D.P. background and some recruitment experience, or a very strong recruitment skill, which must include both contract and permanent staff placement.

This is a first class opportunity to make a significant contribution to the company's success and the benefits package reflects this.

Call me today to arrange an initial interview.

Phil Clarke
TANGENT COMPUTER SERVICES LTD
102/106 SOUTH STREET
ROMFORD
ESSEX RM1 1RX
Tel: ROMFORD (0708) 750201

tangent
SUCCESS IN THE SOFTWARE WORLD

(4860)

SPECIALISTS IN COMPUTER CAREERS

A new name in recruitment pages, CONQUEST has brought together a group of computing professionals each with over 15 years' industry experience and all dedicated to providing the very highest standard of service to both computer staff and users alike.

The recruitment operation is headed by JOHN GRAHAM who will be pleased to answer enquiries from those seeking fresh employment, or from companies who would like more details on the specialist services available.

HERE ARE JUST A FEW OF OUR CURRENT VACANCIES:

ANALYST/PROGRAMMER (RPG) £12000 (Bucks)

Sound RPG programming and analysis experience will qualify you for this key development role within a young, dynamic manufacturing/distribution company utilising a recently installed SYSTEM 38. The support purpose-built computer facility and exciting project plans will appeal to even the most discerning career-builder.

PROGRAMMER (HP) £9000 (Bucks)

An ideal opportunity if you enjoy straightforward, no-frills programming in a progressive DP environment where the emphasis is on new systems rather than boring maintenance. The company is one of the most successful to the UK. The minimum requirement is one year's COBOL programming experience.

PROGRAMMER/ANALYST (DEC) £11000 (Middlesex)

A competent all-rounder is required by this leading high-tech equipment manufacturer to work on VAX-based development projects. You will be experienced in PDP or VAX BASIC and will relish significant user liaison, working in a lively department with an unusually diverse range of applications. Opportunity also for involvement in micro work.

SALES SUPPORT (Medical Systems) £ Neg. (Bucks)

A well-established international software house is about to enter the medical systems market and requires a strong personality to meet the challenge and from the outset of the new team. The ideal candidate will have used MUMPS for development of relevant medical systems possibly in an end-user environment but will be seeking a more exciting and varied software house role. Salary will be substantially more than your current level.

For more details contact JOHN GRAHAM (Evenings and weekends phone: 06285 21922) (4869)

Conquest
RECRUITMENT
(0753) 821644

THE UNIQUE SALES COMBINATION

**PRIME PRODUCTS * PRIME TRAINING
* YOUR TRACK RECORD**

PRIME is recognised as one of the most successful companies in the super mini computer industry with an outstanding growth record and high profitability.

An exciting development programme, including several major product launches, will require an expansion of our sales team throughout the country.

Rarely do opportunities exist to move into our highly rewarding computer sales environment but if you can demonstrate an exceptional track record of sales achievement in:

Office automation and office systems;
Computer aided design/computer aided manufacturing;
Large commercial distributed data processing;

Or you are a pre sales systems analyst with sound experience in any of the above areas and genuinely seeking a move into sales then we would like to hear from you.

Our training, including three weeks in the United States and thereafter ongoing, is the envy of the industry and will equip you with the necessary technical expertise and product knowledge to ensure a highly successful career. An on-target income between £22,000 - £27,000 per annum includes a high base salary with excellent guarantees and a commission structure based on realistic and achievable quotas with unlimited earnings potential. A two litre car is provided and a wide range of benefits.

If you feel you can meet our requirements, then write, with brief personal and career details, to one of our Regional Sales Directors.

For positions north of London:
Ken Murray, PRIME Computer,
Norfolk House, Saffron
Road, Saffron Walden,
Essex, CB10 1LZ. Tel: 0963 607744

For positions in London, the
South and South-West:
Bill Griffiths, PRIME Computer,
51 High Street, Farnham, Surrey
GU10 1AB. Tel: 071-751 5051

PRIME

your appointments register

Programmers

NCR/IBM/COBOL	to £15K
Insurance Banking	Lenden H. Ceunius - N. Eng.
COBOL/PL1/OS/CICS/IMS	to £15K
Commercial	H. Countries - Midland - Manchester
PL2/COBOL/MINIS	to £12K
Commercial	London
HONEYWELL	to £12K
Systems Programming experience	Middlesex - London
DATA GENERAL ECLIPSE	to £11K
Cobol	Leicestershire
SYSTEMS 34/36/38/RPG2	to £12K
Insurance/Commercial	London/Home Counties
IBM	to £16K
System exp.	Essex
BASIC	to £11K
Mini Computers	London
IBM/UNIVAC/COBOL	to £12K
On-line/Database	Surrey
NCR 8200	to £14K
Financial	SW LONDON

DATA GENERAL ECLIPSE	to £11K
Cobol	Leicestershire

SYSTEMS 34/36/38/RPG2	to £12K
Insurance/Commercial	London/Home Counties

IBM	to £16K
System exp.	Essex

BASIC	to £11K
Mini Computers	London

IBM/UNIVAC/COBOL	to £12K
On-line/Database	Surrey

NCR 8200	to £14K
Financial	SW LONDON

Analyst/Progs

PRIME CAD/CAM	to £11K
Home Counties/E. Angle	

IBM 34/38/4341	to £15K
London/Home Counties/N. E.	

ICL 1500/ME29/2903	to £12½K
Cobol	Essex/Herts

IMAGE PROCESSING C/UNIX	to £12K
Scientific Applications	

Hardware/Support

APPLICATIONS ENGINEER	to £15K
Peripherals Support/Microprocessor Systems	

IBM SYSTEMS/SUPPORT	to £15K
Derby	

SUPPORT ENGINEER	to £15K
London/Europe/Amsterdam	

EXPD. SOFTWARE TECH. AUTHORS	£ NEG.
Datacomms/Operating Systems/Telephony/etc.	

PROJECT ENGINEER	to £11K
Systems/DEC	Beds/Manchester

ICL/PRE- AND POST-SALES SUPPORT	to £15K
Beds/Manchester	

SOFTWARE SUPPORT	to £18K
Medical/Training/Technical	Berkshire

SOFTWARE SECTION MANAGER	to £18K
Peripherals/Microprocessor	Essex/Middlesex

Computer Search and Selection	to £18K
Hamilton House, Marlowes	

Computer Search and Selection	to £18K
6th Floor, Carolyn House, Dingwall Road, Croydon, Surrey CR0 9XF	

telephone 01 549 9236

Sloangate
The Appointments Register

Systems Analysts

IBM/ICL	to £12K
Stock Control/Commodity Control	London

CAO/CAM	to £16K
Real time - Modelling	Essex/South West

IBM/BURROUGHS	to £16K
Commercial Accountancy	London/Surrey/Manchester

IBM/PL/1/DL/1	to £11K
Database Support	Middlesex

ICL/ME29	to £16K
Commercial Design	Herts

IBM SYSTEM 34/38 MAAPICS	to £13K
	Sussex

Software Engineers

CORAL/PASCAL/MASCOT/C	to £13K
Communications	Gloster/Hants/Sussex/Midlands/Manchester

REAL TIME/ASSEMBLER	to £13K
Microprocessor Design	Suffolk Coast

MILITARY SYSTEMS/RADAR	to £14K
Corel - Meccot	Herts/Surrey/Essex/S. West

PDP/VAX/INTEL	to £13K
Telecomms - ATE	Derby/Surrey/London/Kent

COMMS/TELECOMS/MOD	to £14K
Mini/Mainframe	E. Angle

HP3000/INTEL	to £12K
CAD/CAM/AE	Home Counties

TERMINAL EM

CONTRACTS

ICL

GEORGE 111/DME COBOL PROGRAMMERS
GEORGE 111/DME COBOL ANALYST/PROGRAMMERS
VME COBOL ANALYST/PROGRAMMERS
DATA ANALYSIS ANALYSTS
2800 IDMS/TPMS DESIGNERS/ANALYSTS + PROGRAMMERS
ME 28 IOMS/TME/TP ANALYSTS + PROGRAMMERS
ME 28 TME/TP/COBOL DESIGNERS
DRS 20 CICS COBOL SYSTEMS DESIGNERS, ANALYSTS + PROGRAMMERS
SYSTEM 25 COBOL/IAS ANALYST/PROGRAMMERS
SYSTEM 25 ASSEMBLER PROGRAMMERS
TECHNICAL AUTHORS - URGENT

IBM
DOS VSE CPG PROGRAMMERS
OS CICS COBOL PROGRAMMERS
SYSTEM 38 RPG 111 VARIOUS - URGENT
MVS COBOL TO VWRITE SPF PROCEDURES - PROGRAMMERS
SYSTEM 34 RPG 111 WITH COBOL - PROGRAMMERS
SYSTEM 34 TO 38 CONVERSION - PROGRAMMERS
VM/CMS - SYSTEM PROGRAMMERS
MVS COBOL - PROJECT LEADERS
MK IV - ANALYST PROGRAMMERS
IMS DB/DC COBOL PROGRAMMERS
IMS DB/DC PL1 - ANALYST PROGRAMMERS
VM/SP - SYSTEM PROGRAMMER

Comac
Computer Appointments & Contracts Ltd

27 Town Centre, Hatfield, Herts. Telephone Hatfield (07072) 65699 or 69889. (24 hour answering service)

PL/I Contracts

Come on you PL/I experts - where are you hiding?

Our clients, predominantly major City Institutions, are regularly calling upon us to provide freelance PL/I programming support, but there is a limit to what we can do without first finding more of you.

If you are proficient in the use of PL/I, that will be a tremendous start; if you practice JSP techniques, so much the better; if you have experience of IMS DB/DC, you have hit the jackpot!

Working conditions are excellent; the environments are friendly; contracts, both long and short, are available for a start anytime over the next 6-8 weeks, but the sooner the better; rates are very attractive.

Don't delay - send your CV or telephone Barrie Frost as soon as you can.

Almand Computer Resources Ltd
FREEPOST, London EC1B 1PH
Telephone: 01-820 0801 (24 hr)

HONEYWELL

LEVEL 66 IDS TDS COBOL ANALYST PROGRAMMERS
LEVEL 66 DM ANALYST PROGRAMMERS

OTHER

+ HP 3000 COBOL DESIGNERS/ANALYSTS/PROGRAMMERS - VARIOUS
- SOUTH
+ HP 3000 QUIZ QUICK ANALYST/PROGRAMMERS - SCOTLAND
+ WANG VS 080 COBOL PROGRAMMERS
VENTEK DATAPORT DATABUS PROGRAMMERS
DEC PDP11 RSTSE RMS BASIC +2 PROGRAMMERS
DEC PDP11 PASCAL PROGRAMMERS
TANOEM COBOL PROGRAMMERS
8086 INTEL MDS ICE86 ASSEMBLER ASM PROGRAMMERS

OVERSEAS

UNIX C PROGRAMMERS, DESIGNERS - NEW JERSEY - USA
SYSTEM 38 RPG111 - GENEVA - SWITZERLAND
WANG SNA - SOFTWARE ENGINEERS - BOSTON - USA
AOF CONSULTANT - BRUSSELS - BELGIUM
SEL 32 MPX SYSTEMS PROGRAMMERS + PROGRAMMERS - BRUSSELS
- BELGIUM
SEL 32 HARWARE ENGINEER - JO'BURG - SOUTH AFRICA

KUWAIT

IBM 370/158 CICS COBOL X 4 PROGRAMMERS 15k FREE ACCOMMODATION.
4 WEEK HOLIDAY FLIGHTS. INSURANCE. MARITAL STATUS

digital

Our client, DIGITAL, are currently expanding their personnel support group to provide customer support in the following application areas

- Computer Tools (operating systems, languages, application generators)
- Communications
- Integrated accounting
- Financial tools

In line with this expansion, DIGITAL wish to recruit a number of APPLICATION SUPPORT SPECIALISTS experienced in these areas.

In addition to your professional skills, you must possess certain attributes which will ensure success in this demanding area. Diagnostic ability, excellent communications skills, both written and spoken, self-motivation and the ability to function effectively and calmly under pressure.

The role of Applications Support is broadly-based within the organisation. It involves customers, liaison, to provide both pre and post-sale user support; the analysis, evaluation and monitoring of product quality, supplying management information about market penetration and system performance. A further development of your responsibilities would be training internal system personnel.

For the right man or woman, with a comprehensive knowledge of applications this is an excellent opportunity for career development in a growth industry, with an internationally successful and stable organisation.

A competitive salary is offered together with a full range of generous fringe benefits normally associated with an internationally successful organisation.

To apply, please contact George Shaw on 01-549 9236 (24-hour answering service)

Sloangate Recruitment Advertising Limited
Dominic House, 171-177 London Road, Kingston-upon-Thames,
Surrey KT2 6RA. Telephone 01-549 9236

Sloangate
Recruitment Advertising

SALES EXECUTIVES

(COMPUTER CONSUMABLES)

NATIONAL COMPUTER SUPPLIES

A Division of Visionhires Communications
Require self-motivated sales people in the Notts, Derby and West Midlands regions. The positions would require selling nationally known products into existing accounts and the penetration of new accounts.

It is unlikely that applicants below the age of 25 would have the necessary experience. Ideally candidates would have three years' experience in this or a related industry.

Remuneration would be by way of an attractive basic salary plus commission.

A company car and other benefits would apply commensurate with a large organisation.

Write with full details of career and salary history to:
Regional Manager
NATIONAL COMPUTER SUPPLIES
Unit H, 3 Tadman Street, Wakefield, West Yorkshire

(4728)

SENIOR ANALYST/PROGRAMMER

Based in Warrington, Cheshire, the company seeks to appoint an experienced person to control the development of its software located on its PRIME 550/2. The successful candidate will be experienced in FORTRAN and will have a strong background in Systems Analysis.

Applicants will need to show the ability to work with minimum supervision.

Salary negotiable.

Applications together with cv to:
Mr K. L. Waters, W. Waters & Son (Trade Protection) Limited, Bladen House, Haydock Street, WARRINGTON, WA2 7UW.

(4673)

Systems Programmer

Nottingham
Salary £21,108-£21,285 p.a.
East Midlands Electricity operate a 16 megabyte 3083B and a 12 megabyte 3033 IBM Computer using a MVS/SP 1.3 Operating System. Other software includes CICS for teleprocessing, TSO for program development and personal computing, and the IMS/DLI database management system. A network of over 350 terminals is supported.

The successful applicant will be required to work in a small team specialising in the implementation and tuning of manufacturers' software and the design and development of utility routines and programs. Sound and proven ability in Assembler and/or COBOL languages is required. Some knowledge of IBM Operating Systems and Utility software would be an advantage. Initial salary will be £21,108 p.a. and will be supported by attractive fringe benefits.

Application forms, obtainable from the Personnel Manager, E.M.E., PO Box 4, North P.O., 388 Coppice Road, Arnold, Nottingham NG6 7HX should be returned by 4th August 1983 quoting vacancy number EM/64/83.

(4678)

WORK ELECTRIC E

DISABLED LIVING FOUNDATION Analyst/Programmer

An exciting and prestigious post in a national information service on disability.

Applications are invited for a new post with the Disabled Living Foundation's Information Service for one year with possibility of extension.

The duties of the post will be concerned with the start up and development of a computer-based PDP 11/73 information storage and on-line retrieval system where knowledge of database will be relevant. A secondary task will be to extend the use of the computer in administration of the Foundation's work. The project has attracted funds from the Department of Industry.

Salary: £9,000-£10,000.
Application form and further information from: The Disabled Living Foundation, 348 Kensington High Street, London W14 8NG. Telephone: 01-502 2491.

(4723)

JUNIOR PROGRAMMER
N.E. Surrey

Substantial group of Timber and Builders' Merchants require an Assembler Programmer to strengthen their ICL System 25 development team. Previous experience of System 10 or System 25 would be an advantage.

The position carries a salary of up to £6,750 dependent on age and experience and 21 days' holiday plus bonuses.

Please apply in writing with C.V. to:
D. Lidder, Group Data Processing Manager

Sabah Timber South East
(Merchants) Ltd
Aylor House, 1 Central Road
Worcester Park, Surrey KT4 8DN

(4681)

SYSTEMS & PROGRAMMING

CONTRACT REQUIREMENTS

IBM MVS, COBOL - ANALYST/PROGRAMMER

IBM MVS, COBOL - PROGRAMMER

IBM MVS, COBOL - TEAM LEADER

IBM SYSTEM 38, RPG 3 - PROGRAMMER

IBM DOS/VSE, PL/1, DL/1 - PROGRAMMERS

IBM SYSTEM 38, MAAPICS - PROGRAMMER

HP 3000 IMAGE, QUERY, COBOL - DESIGNER/PROGRAMMERS

NIXDORF BASIC - ANALYST/PROGRAMMERS

BURROUGHS 6900 GEMCO, DMSII, COBOL - PROGRAMMERS

ME29 TME, COBOL, IDMS - ANALYST/PROGRAMMER

ME29 TME, IDMS - PROGRAMMER

ME29 TME, IDMS - DESIGNER

ICL SYSTEM 25 - ANALYST

ICL VME, COBOL, IDMS, TPMS - SYSTEMS TESTERS

ICL 2900 VME/B, COBOL, TPMS, IDMS - DESIGNER

ICL 2900 VME/B, COBOL, TPMS, IDMS - PROGRAMMER

ICL 2900 VME/B, COBOL, TPMS - PROGRAMMER

ICL 2900 VME/B, COBOL, IDMS - ANALYST/PROGRAMMER

ICL 2900 VME/B, COBOL, IDMS - ANALYST/PROGRAMMER

- SOUTH COAST

- SOUTH COAST

- SOUTH COAST

- LONDON

- SURREY

- LONDON

- MANCHESTER

- HERTS

- LONDON

MICROWAVE ENGINEERS URGENTLY REQUIRED
Contact Heather or Lynne on 01-948 5922 (working hours)

Or alternatively contact Lynne on 01-543 4140 (evenings and weekends)

PERMANENT POSITIONS

to £17,000 + Car + bonus

MVS SYSTEMS CONSULTANT -

West of London

A major international software supplier is currently looking to add to its MVS systems team. You will be responsible for pre- and post-sales support of company products, which will involve you in presentations, demonstrations and training as well as product development. Although your major effort will be to support MVS products, knowledge of CICS or IMS, VM, TSO, SPF, etc., would be a distinct advantage, as would fluency in a second European language. Please quote Ref: 8033/CW.

PROGRAMMING TEAM LEADER - Berks

Due to the continuous increase in the demand for new systems, this household name company currently requires an experienced programming team leader. Based at modern headquarters, to the West of London, you will be leading a team working in an IBM environment using the most recent hardware and software releases. The applications cover manufacturing, sales, marketing and distribution and finance so a broad approach to programming is required. Please quote Ref: 8063/CW.

SNR (BUSINESS) ANALYSTS - Bucks/Herts Borders

Our client is currently switching from mainframe systems to a distributed mini environment with full use of database. To ensure that they maintain their position in world markets (they currently export 80% of their product), they need Analysts to rework the sales order processing system, from on-line order entry, to despatch and invoicing. They currently need to improve on a same day cycle, so if you match the degree of excellence required, apply now. Please quote Ref: 8137/CW.

SYSTEMS ANALYST - Bucks

Aged 23-28 Two years' programming, at least one year in analysis? If the answer is yes, then you could be looking at a very bright future with a major British group. Working in a continuous development environment, you will be part of a team enhancing major systems and there is considerable contact with users and other development teams. Experience of UNIVAC 1100, is preferred, but Analysts showing the required skills will be trained. Please quote Ref: 8346/CW.

We also require the following permanent staff for other clients:

Datapoint Programmers/Analysts

Graduate Programmers Cobol/IMS/DL

French speaking Programmers Cobol/IMS DB/DC

Analyst/Programmers ME29 Cobol TME

Burroughs Cobol Programmers Medium/Large Systems

Cobol Team Leader

Tech Support (Burroughs)

Please contact DAVID at KPG or on 01-747 0969

during the week or at weekends.

KPG
01-948 5922
KPG Computer Support Services Limited
Cobden House, Park Lane, Richmond, Surrey, TW9 2RA



Systems Programmers Trainee Systems Programmers

SOUTH COAST

above average salaries

- MVS/SP - migrating to XA in 1984/85
- SNA
- CICS & OL/1 - one of the biggest installations in the UK and still growing fast
- IBM 3083 and 3032 installed, 3081 in 1984

In support of these and other developments, we wish to recruit additional staff in the Technical Group as follows:

Systems Programmers

Applicants should ideally have 2 years' systems programming experience using MVS, VTAM, CICS or OL/1. Ref P50.

Trainee Systems Programmers

Applications are invited from Applications Programmers with at least 2 years' experience who wish to move into Systems Programming. Or, from graduates with a good degree in Computer Science or a related subject. Ref P51.

Excellent conditions and benefits include substantial assistance with relocation expenses where appropriate.

Please write to The Senior Personnel Officer, Southern Gas, 80 St. Mary's Road, Southampton for an information package, or ring us anytime on Southampton (0703) 31818. Please quote the appropriate reference number when applying.

SOUTHERN GAS



The World's largest and oldest established independent leasing company specialising in sales and leasing programmes for the high technology office products market.

AREA SALES MANAGERS

London

TARGET EARNINGS £20K +
5 Figure Basic + Com & Benefits

The requirement is for proven sales professionals with excellent track records gained selling high tech office products. Knowledge of leasing is not important as full training will be given. More important is the fact that you can relate the FADE of our programmes to the needs of the OP market place. Our no ceiling incentive plan will enable you to earn a substantial income for above target performance with the benefit of

real career development in the future. There will be vacancies in other areas in the near future.

Please send career details in full confidence to:

P.E. HOLD, ESQ
SALES & MARKETING DIRECTOR,
U.S. LEASING LIMITED,
314 REGENTS PARK ROAD,
LONDON NW1 2JX.

(3184)

Pioneer Appointment Systems Manager

Saudi Arabia

c.£20,000

This key appointment is for a Jeddah based manufacturing joint venture between a prestigious Saudi group and a leading US company. A Computer Systems department is to be established and a systems specialist is required to undertake its development.

Reporting to the Operations Manager, prime responsibilities will include the installation of hardware and software environments, day-to-day systems performance, feasibility studies, project planning, programming, and the training of users.

Candidates must have worked as a leader on a major development project, and must have proven working experience of at least two different hardware installations and several computer languages.

Attractive tax free salary for discussion. Other benefits include free furnished accommodation, car, renewable married or single status contract, and UK leave with paid air fares.

Please write in confidence giving full career and personnel details to M. J. Lebbell, ref: FY1190-1.

MSL middle east

Management Selection Limited
International Management Consultants
52 Grosvenor Gardens London SW1W 0AW



CONSULTING APPLICATIONS MANAGER

An experienced manager is required to manage a small group of multi-disciplined CAD/CAM Specialists.

The successful candidate is likely to have gained considerable experience as a practising mechanical engineer before moving into the area of computing and will now be involved in the application of CAD/CAM to a wide range of mechanical processes.

Preferred age group 35-45.

This position qualifies for a company car, and the usual benefits associated with a position at this level.

CAD APPLICATIONS SPECIALISTS

Application Specialists at both senior and junior level are required for our consulting and applications group. These staff provide technical support to our customers and sales teams. Their responsibilities include acting as a focal point for technical information between our parent in the USA and Europe, together with the provision of market intelligence and liaison with Marketing/Research and Development in the U.S.A.

We are particularly interested in hearing from experienced CAD application engineers operating in the following areas:

- (1) Integrated circuit design.
- (2) Printed circuit board layout.
- (3) Mechanical engineering design (finite element analysis, surfaces and solids).
- (4) Petro chemical applications such as piping, and three-dimensional schematics.

A generous salary and excellent conditions of work will be available to the successful applicants.

Please contact: Mr W. D. N. Devles, Celme Company, Beech House, 373/399 London Road, Camberley, Surrey GU15 2HR. Telephone: (0276) 682021

COMPUTERS

Exceptional Growth Company

Future Computers Limited is a new British company dedicated to the design and manufacture of leading micro computer systems aimed at the business market. Future Computers is backed by a consortium lead by the British Technology Group and the APA Venture Capital Fund.

The philosophy of the Company has been to create an advanced family of 16 and 32 bit computers using the best of design and technology with features to satisfy known and future needs in industry and commerce, and still priced to compete in world markets. The introduction of the Future computer range offers the business user a wider choice of planned options than has ever before been available from a micro computer manufacturer.

Starting with a powerful stand-alone micro computer, the range can grow simply and cheaply to become a fully integrated electronic office, with multi-user, multi-tasking networks and micro to mainframe communications. The 'future evolution' concept allows any size of business from the High Street to Wall Street to enter the range at a performance level to suit its needs, and grow from that point.

Senior Analyst – Systems Software

To £14,500

If you can claim two out of the following we would like to talk to you:

1. Five years experience in micro/minicomputers.
2. Communications experience.
3. Responsibility for planning software development in overall design structure.
4. Knowledge of operating systems.

The successful candidates will become responsible for state-of-the-art developments in the following areas: INTEL 186/286; ETHERNET and other local area networks; colour graphics; Winchester controllers; CPM/86; MSDOS; UNIX.

For an informal interview or to obtain further information please call Ian Goldsmith on 01-935 0671 during office hours; alternatively send your confidential resume to the London address below.

Technical Sales & Management Appointments



Specialist Computer Recruitment Ltd

SOUTH
James House, 46 James Street,
London W1M 5HS
01-535 0671/480 0481

MIDLANDS & INTERNATIONAL
35-37 Great Charles Street,
Queensway, Birmingham B3 3JY
021-236 3781

NORTH
International House, 84 Oceansgate,
Manchester M3 2ER
01-833 0427

BELGIUM
Avenue Louise 327,
Box 4, 1050 Brussels
010 322-840 7161/71
HOLLAND
Willemspalkweg 92,
1013 H Amsterdam

010 3120-780947

Systems Programmers

£8-£12,000

We would be interested to talk to graduates with a relevant degree or equivalent, and individuals with experience in one or more of the following areas:

1. One year or more experience in mini/micro computers.
2. Communications experience.
3. Knowledge of operating systems.

SALES EXECUTIVE

required for Codex (U.K.) Limited

Now well established as a permanent feature of Britain's data communications scene, Codex (U.K.) Limited is expanding its sales team and require a TEST EQUIPMENT SALES EXECUTIVE.

The successful applicant should be qualified to at least HNC or HND level and have experience of using high technology test equipment, preferably in the data communications field.

The position based at Manchester, will involve selling data communications test equipment in Scotland, the North of England and the Midlands.

We are offering an attractive salary plus the use of company car. Other benefits include life assurance, private health plan, pension scheme, all non-contributory, 20 days' annual holiday.

Please telephone for application form:
Miss S. J. Sewer, Sec/ps to managing Director, Codex (U.K.) Limited
01-689 2101

TECHNICAL AUTHOR COMPUTER SOFTWARE

Circ. £13K

BERKS.

Our client, an international minicomputer manufacturer, is seeking to employ a Technical Author for their "state of the art" product range. These include; a high performance transaction processor, database management system, computer networking packages, systems resilience software and some related application packages.

Responsibilities will include reviewing the technical function specifications of new software products with the development teams, writing end user overview and operation manuals for the products, and reviewing these manuals with selected management.

Ideally applicants will have:

- Minimum 5 years experience in technical authorship and/or software systems and programming.
- Proven interpersonal communications skills.
- Excellent command of written English.

In return you will enjoy an interesting position with one of the world's most prominent mini computer manufacturers.

For further details, please phone Keith Taylor at our Reading Office, or write enclosing a full C.V.

SOFTWARE ENGINEERS

LONDON, HOME COUNTIES, PROVINCES

£14K+BUFA++ Seven software engineers sought for NEW micro projects in control/medical applications.

£10K+++. New, turn key house, ground floor opportunity for bright young commercially orientated engineer to join friendly company.

£20K+car++. Leading CAD/CAM manufacturer, 32 bit machines, offers superb opportunity to expand into marketing using your software skills.

£20K+car++ Senior marketing opportunity for ambitious software engineer seeking career development in commercial micros.

Call Clinton on 01-543 4844

Alltronics People
(Agy)

MC/
MC COURT COUSINS LTD.

27-29 Greyfriars Road,
Reading, Berkshire
Telephone (0784) 595346 (24 hours)
Telex 804828 MCCTC

Chesham House, 150 Regent Street,
London W1R 5FA
Telephone 01-580 8288

Extend Your Skills to Europe...

... and a better way of life

We are looking for a skilled IBM Systems Programmer whose technical experience will include two of the following:-

* DOS/VS(E) * VM * CICS * DL/1

Senior Systems Programmer

Database

Teleprocessing

£15,000-£20,000

WESTERN GERMANY

Technical Sales & Management Appointments



Specialist Computer Recruitment Ltd

BOUTH
James House, 48 James Street,
London W1M 5HS
01-938 0871/488 0481

MIDLANDS & INTERNATIONAL
35-37 Great Charles Street,
Dunstable, Birmingam B3 3JY
021-236 3781

NORTH
International House, 84 Deansgate,
Manchester M3 2ER
061-833 0427

BELGIUM
Avenue Louise 327,
Bella 4, 1050 Bruxelles
010 322-840 7181/71

HOLLAND
Williamsparkweg 92,
1071 H.M. Amsterdam
010 3120-76047



Senior Programmer COBOL

Benefits package £20,900 net of tax* BAHRAIN

To make a significant contribution within a 3 year contract to the company's established Central Computer Department. Set up in 1974, and now employing some 30 staff, the department is involved in the development of on-line systems on an IBM 4331.

Candidates should have a minimum of 3 years COBOL experience plus a knowledge of VSAM, ICP/CMS, CICS or MANTIS.

Salary, at present totally tax-free and freely transferable, will be negotiable in five-figure range.

In addition, substantial benefits include: * 32 working days' annual leave plus 12 days of public holidays * rent-free furnished air-conditioned accommodation * full recruitment and relocation expenses * annual return air fares for employee and family * assisted education for children * free medical care and life assurance.

* Benefits calculated at current exchange rates.

Bahrain is a stable country with a liberal government. English is widely spoken and the company is experienced in the rapid and smooth entry of expatriate staff into the local community. Extensive sports and social facilities exist.

Please write with full details to: K.W. Rows,
Alba Smelter Services Ltd, Standbrook House,
2-8 Old Bond Street, London W1X 3TB.

MICRO TRAINING CONSULTANT WEST LONDON

£10-£11K+CAR
Our client, the UK operation of this leading micro software company who specialise in financial packages, are seeking a training consultant who can complement their 1983 expansion programme.

The prospective candidate should come from a training environment who can demonstrate experience in the following areas:

- Developing and conducting training courses for the dealer and End User Market.

- Experience of ACCOUNTING applications and Office Productivity systems.

You must be mature, self-motivated, bright and have an outgoing personality with good communication skills.

An excellent remuneration package is offered including overseas travel, company car, bonus and BUPA.

For more information on the next career move you'll never regret, ring SHIRLEY FRANCIS, quoting Ref: 0526.

14741


Lloyd Chapman
Associates

123 New Bond Street, London W1Y 9AE. 01-499 7761

Freelancers...

... in the North of England and Scotland who are available now or in the near future are invited to contact me, Peter Moore, to discuss a variety of interesting and rewarding assignments throughout the UK and overseas

P-E Computer Services Limited

Winchester House, Fountain Street, Manchester M2 2SF. Telephone 051 223 2776.

14481

FOR
CLASSIFIED
ADVERTISING USE
DIRECT LINES
RECRUITMENT CONSULTANCIES
(01) 661 8787
DIRECT ADVERTISERS
(01) 661 8080

BUSINESS SYSTEMS MANAGEMENT (Manufacturing)

c£13,500 (BASIC*) S. E. ENGLAND

Our client, an international blue chip electronics corporation, has always been ahead of the field in the provision of sophisticated business systems and information technology. Recently established and equipped to cope with continuing expansion, the Business Systems function provides on-going service to all operational activities. Increasing work load has created a need for an ambitious man or woman for a key post as Project Leader. Engaged on the development and installation of on-line package systems, the suitable job-holder will:-

- possess a degree or equivalent qualification in a relevant subject, plus more than 3 years E.D.P. experience in a Manufacturing environment
- be an effective communicator, able to direct and control a small team and deal with top level user management
- maintain close liaison with colleagues in order to analyse and verify user requirements, identify problems, advise on techniques, prepare formal proposals, test and implement approved systems
- have experience of systems operating on HP 3000, DEC/VAX or similar and the use of Cobol, Basic, Fortran languages.

The systems network is extensive, the work exciting and career prospects exceptional. In addition to basic salary, extra project hours are paid when worked. Conditions, benefits and relocation are excellent. Apply in strictest confidence quoting Ref. R/25.



Michael Quest Associates

(Computer Management Selection Division),
596 Chiswick High Road,
London W4 5RS. Tel: 01-995 3246/7.

FREELANCE

Highly competitive rates for programmers and analyst/programmers. Register now.

IBM

MVS, CICS, DL/I
DOS, COBOL
COBOL, CICS, VSAM
COBOL, MARK IV, IMS
PL/I
PL/I, IMS, DB/DC
DOS, COBOL, ADABAS
System 38, RPG 111

South Coast
London
Herts
London
Surrey
London
Herts
Surrey

3 months
3 months
3 months
4-6 months
3 months
3 months
1 year
3 months

ICL

VME/B, COBOL
VME/B, COBOL, IDMS/TP

London/Gloucester
UK/Europe

3 months
1 year

OTHERS

Siemens, COBOL
Micro, Coral 66
Vantek, Database
Database Administrator (VMS II, ADABAS)
Honeywell level 5, Assembler/screenwriter
Univac 1100, COBOL, TIP, DPS
Z80 Micros, BASIC, FORTAN

Europe
Midlands
Norwich
Midlands
Bucks/Herts
Hampshire
Oxon

1 year
6 months
6 months
3-6 months
3-6 months
3-6 months

Contact Lauren Crowe

MARCOL 01-402
9355
Computer Systems
49 Queen's Gardens, London W.2.

Real-Time Software Professionals

To £15,000 p.a.

Attractive south coast location

Genuine career progression, improved technical skills and an excellent rewards package - those are just some of the prospects awaiting talented Software Engineers with our client, one of the world leaders in the field of non-defences, advanced electronics and data communications technology.

The company's success is reflected not only in bulging order books but also in an expansion programme which dictates that they appoint additional real-time software professionals at all levels - from Programmers to Project Managers.

Working at the very forefront of new technology, you will join a small team environment. Projects are carried out on a range of mini and microcomputers. Both high and low level languages are utilised and you may have the opportunity of working in 'C' under UNIX.

This is a highly stimulating and demanding environment calling for people of graduate calibre or equivalent who can offer a minimum of two years' real-time development. Some communications experience would also be advantageous.

These posts enjoy the considerable advantage of an extremely attractive semi-rural, south coast location with reasonably priced housing and first-class amenities. In addition, there is a substantial rewards package, comprising a high basic salary and generous allowances for convenient daytime shifts. Enhanced earnings through voluntary, paid overtime, are also available. A comprehensive range of benefits is included together with a valuable relocation package.

Interested men or women should contact Patrick Convey quoting reference no. CW/321.

18th Floor, The Rotunda, New Street, Birmingham B2 4PA
Tel: 021-632 6848 (24 Hours)



COMPUTER PERSONNEL CONSULTANTS LTD



logistix Logistix Recruitment Limited
10 Grenville Place, London SW7 4RW

Telephone 01-373 3063

Systems Designers/Progs

S. Home Counties: Salaries to £15K

A series of newly won contracts, gained by a rapidly expanding Systems and Software House, has given rise to a number of vacancies for Systems Designers. Ideally, applicants should be between 26 and 32 years old and hold at least one degree in Computer Science or a numerate subject. Industrial experience must have been gained in a real-time environment and candidates should have participated in the design and implementation of these fields will be welcomed. Ref: L/16/A

VAX/ForTran Programmers

Central London: Salaries to £12K

An international Publishing House has recently established a subsidiary to develop and market Information and Lithographic Databases. The Company now has an immediate requirement for both Programmers and Designers to join its Headquarters organisation. Applicants, aged 23-30 years must hold a numerate degree and preferably a higher qualification in Information Science. Ref: L/16/B

Recent Graduate? Interested in Comms?

Central London: Salaries to £10K + Benefits

A leading Systems House/Consultancy has retained Logistix to assist with the recruitment of several Designers and Programmers to form new project teams in the field of communications systems development. Projects are currently being undertaken for clients in the UK, France, Benelux and Switzerland, so opportunities for travel will arise. The applications involve the design of communication networks, network gateways, message switching systems and interfaces to Teletex. Clients range from large commercial organisations to communications service providers.

SOFTWARE DESIGNERS/PROGRAMMERS: With a good numerate degree and at least two years' experience in industry, you will ideally have some knowledge of a proprietary networking system, e.g. SNA or DECNET and communications protocols. You should have experience with block structured languages and, ideally, also an Assembler.

GRADUATE PROGRAMMERS: With a good numerate degree and at least six months' experience in industry, you will probably be making your first move. Some knowledge of communications would be useful but more important is a desire to gain experience in a technically demanding environment. Knowledge of a language such as PASCAL or 'C' is desirable.

The Company is recognised as a market leader in innovative software development, particularly in communications and provides a well-defined career path for the technically motivated individual who also wants to work in a friendly atmosphere.

BENEFITS: The Company offers an excellent benefits package consisting of health and medical schemes.

APPLICATIONS: Please submit a well documented résumé or alternatively telephone one of our Consultants quoting Ref: LJS/2.

C & Unix Programmers

London: Salaries to £10K

A highly respected Product Supplier is currently seeking to recruit several Systems and Applications Programmers to work on its UNIX-based range of products. Applicants, aged 22-26 years, should have graduated since 1980 with a good class honours degree in a numerate subject and have at least one year's commercial or industrial experience. Very

Ref: L/16/C

Technical Authors

Italy: Salaries to £11K + Overseas Allowance

An internationally renowned Systems and Software House is currently seeking additional Technical Authors for permanent career positions in Italy. Suitable applicants should have a good educational background and at least 18 months' experience in the design and writing of User documentation for either a software or hardware product. A good command of the English language is essential

Ref: L/16/D

Real-Time Programmers

Central London: Salaries to £9.5K

A leading Systems House and Consultancy is currently seeking to recruit additional Real-Time Programmers for its Central London Head Office. Suitable candidates should hold a numerate degree and have at least 12 months' subsequent software programming experience in an industrial environment. Your programming skills should preferably include: Intensity, PASCAL, C, FORTRAN, COBOL, 68000 or Assembler.

Ref: L/16/E

Senior Analyst/Programmers Holland

To join our existing team in The Netherlands developing a dynamic real-time, on-line database and communications system for an international oil and shipping concern. A sound knowledge of IBM System 38 is required together with RPG III.

Due to the continued expansion of the data processing facilities to incorporate the total world-wide organisation this will enable successful candidates to become involved with a major communications network from its inception.

Ref: 01/08

Software Engineers/Project Leaders Herts

As one of the UK's leading communication equipment manufacturers our client is seeking to enhance its Software Tools Development team. Although mainframe based these tools are intended for use by teams working on new micro-computer development systems. The software tools section are responsible for the design, development and support to both in-house and client users.

Successful applicants will have a minimum of 3 years real-time or communications experience, proven involvement in software tools development and/or support preferably with knowledge of UNIX and 'C'. Excellent salaries plus benefits package is offered.

Ref: 01/06

Telecoms Development Essex

Engineers, from Graduate to Senior levels, with experience in both hardware and software aspects of the telecommunications industry are required to adapt and modify existing equipment to conform to British Telecom standards and overseas customer requirements. Full large company benefits plus relocation, where applicable, is available to successful applicants.

Ref: 01/07

Hardware Development Engineers Herts

To develop hardware for a new range of mini- and micro-based hardware for Electronic Mail, Office Automation, Networking and Telecommunications systems. Good design ability is a necessity with a willingness to work in a team environment. Full training will be given where required.

Previous development experience on ZILOG, INTEL or MOTOROLA hardware is advantageous plus the ability to understand the software requirements generated by the hardware development. The company's rapid growth means excellent promotion prospects.

The number and variance of current and new projects together with the most up-to-date laboratory facilities make this an opportunity not to be missed.

Ref: 01/08

Lecturers London

To join an organisation specialising in the presentation of Programming and Systems Analysis courses to DP personnel. Courses are mainly aimed at the commercial skills i.e. COBOL programming and the design of sophisticated business systems.

Candidates should have a sound programming and/or analysis background with the desire to instruct. Full training in the preparation and presentation of courses will be given as well as the opportunity to be trained in new languages, techniques, etc. These positions offer both challenge and reward.

Ref: 01/09

Technical Authors UK & Overseas

Hardware and Software authors for a large number of clients on projects covering the following topics:

- Operating Systems/conversion manuals
- User manuals for: Intelligent Terminals; UNIX & 'C' - microprocessor development systems; commercial systems
- DEC BASIC programming manuals
- Telecommunications minis
- Systems Descriptions - IBM System 38
- Process Control - sales and technical documentation

Ref: 01/10

Software Engineers Beds

To join a team developing new INTEL 8088 based machine tool control systems utilising a common core of software. Several projects are currently envisaged - some still in the early design stage.

Applicants should have 2-3 years Process Control/Real-Time experience using INTEL and PL/M. A knowledge of ASSEMBLER would also be a distinct advantage.

A realistic salary and benefits package together with excellent future prospects in a challenging software development environment makes this a first class opportunity.

Ref: 01/11

Analysts & Programmers Surrey

The computer services division of an international group have a number of vacancies for Analysts and Programmers with experience of commercial applications on PDP 11 and/or VAX machines. These positions will involve customer liaison, implementation of new systems and enhancement to their existing ones.

Successful applicants will be professional, self-motivating, enthusiastic towards their work, effective communicators and smart. Ideally you will have 3 years relevant experience using BASIC, BASIC+ etc. and salaries will be based on this.

Ref: 01/12

Take this opportunity to discuss these and other requirements by phoning Hitchin (0462) 87141 or write to:

Marketing & Recruitment Division
Industrial Artists Limited
21 Bancroft, Hitchin
Hertfordshire SG8 1JP. Telex: 828148
IA is a registered Employment Business licensed by D of E.

Ref: L/16/F

Ref: L/16/G

Ref: L/16/H

Ref: L/16/I

Ref: L/16/J

Ref: L/16/K

Ref: L/16/L

Ref: L/16/M

Ref: L/16/N

Ref: L/16/O

Ref: L/16/P

Ref: L/16/Q

Ref: L/16/R

Ref: L/16/S

Ref: L/16/T

Ref: L/16/U

Ref: L/16/V

Ref: L/16/W

Ref: L/16/X

Ref: L/16/Y

Ref: L/16/Z

Ref: L/16/A

Ref: L/16/B

Ref: L/16/C

Ref: L/16/D

Ref: L/16/E

Ref: L/16/F

Ref: L/16/G

Ref: L/16/H

Ref: L/16/I

Ref: L/16/J

Ref: L/16/K

Ref: L/16/L

Ref: L/16/M

Ref: L/16/N

Ref: L/16/O

Ref: L/16/P

Ref: L/16/Q

Ref: L/16/R

Ref: L/16/S

Ref: L/16/T

Ref: L/16/U

Ref: L/16/V

Ref: L/16/W

Ref: L/16/X

Ref: L/16/Y

Ref: L/16/Z

Ref: L/16/A

Ref: L/16/B

Ref: L/16/C

Ref: L/16/D

Ref: L/16/E

Ref: L/16/F

Ref: L/16/G

Ref: L/16/H

Ref: L/16/I

Ref: L/16/J

Ref: L/16/K

Ref: L/16/L

Ref: L/16/M

Ref: L/16/N

Ref: L/16/O

Ref: L/16/P

Ref: L/16/Q

Ref: L/16/R

Ref: L/16/S

Ref: L/16/T

Ref: L/16/U

Ref: L/16/V

Ref: L/16/W

Ref: L/16/X

Ref: L/16/Y

Ref: L/16/Z

Ref: L/16/A

Ref: L/16/B

Ref: L/16/C

Ref: L/16/D

Ref: L/16/E

Ref: L/16/F

Ref: L/16/G

Ref: L/16/H

Ref: L/16/I

Ref: L/16/J

Ref: L/16/K

Ref: L/16/L

Ref: L/16/M

Ref: L/16/N

Did you know?

The world beer drinking record for 2 pints is 2.3 seconds

&
Trident are best for contracts!



FREELANCE OPPORTUNITIES

SOUTHERN
0252 516141

ADF Programmers
BURROUGHS 6800/6700 COBOL Analyst/Progs.
CDC BASIS or NASTRAN Progs.
DATAPOINT Datashare Database Prog./Analyst
DG Eclipse COBOL INFOS
Hardware/Software Engineers
Honeywell GCOS, TDS
Ref. CW 101

URGENT
DG Eclipse COBOL INFOS, TPMS
DG R DOS ASSEMBLER
DG R DOS or AOS BUSINESS BASIC
Ref. CW 106

MIDLANDS & NORTH 021-742 4431

BURROUGHS DMS2 COBOL 74 An/Progs.
DATAPOINT, DATABUS RMS Prog.
HP3000 Impe, Query, View Analysts & Progs.
IBM 8100 DPPX An/Progs - URGENT
IBM COBOL CICS DL1 An/Progs.
ICL VMEB IDMS TPMS Progs.
ICL ME29 TME TP COBOL An/Progs.
ICL ME29 TME Analysts & Progs.
PDP RSX CDRAIL Progs.
PDP RSX RTL 2 Progs.
UNIVAC OS3 RPG II Progs.
UNIVAC 1100 DMS TIP An/Progs.
IBM DS MVS Ops.
ICL ME29 Ops.
CMC Reality Anal./Programmers - URGENT
Ref. CW 102

PERMANENT

IBM DATABASE Administrator with JMS DB/DC SC 113
IBM 8100 DPPX or DPP
IBM PL1, IMS DB/OC
IBM PL1 CICS DL1
IBM PL1, Adabas
IBM COBOL IMS OB/OC
IBM COBOL CICS DL1, some with JSP
IBM NOMAD
IBM Series 1 express
IBM System 3B RPG III
ICL DRS 20 and CIS COBOL Progs.
ICL IDMS Systems Prog./Designer
ICL ME29 TME range CDBOL
ICL System 25 Designer and Progs.
ICL VMEB IDMS, all levels, some with TPMS
ICL 2900 VME Technical Support, all levels
ICL VMEB COBOL with SCL
INTEL 8086 Programmers
Ref. CW 113

OVERSEAS
0252 516141

IRAQ
Contact: BILL EVANS
12 months + Assignments July

TEAM LEADERS and ANALYST/PROGRAMMERS -
Honeywell Level 6 GCOS MOD 400 and
COBOL/Screenwriter experience of any: on-line batch;
DB, TP, Comm and H/W
• £700+ p.w. - Tax Free
• Expanses
• Free Flights
• Free Accommodation
• Diversions
• Prst. single but married status considered

SAUDI ARABIA

Contact: BILL EVANS
12 months + Assignments July/August

ANALYST/PROGRAMMERS with PL1, IMS, ADR,
TSD/SRF
• Up to £25,000 p.e.
• Free Flights
• Free Accommodation
• Paid Holidays
Contact: PETER JEZEPH for an immediate confidential
Interview or write, enclosing a detailed c.v.

TRIDENT COMPUTER SERVICES PLC
WE CARE FOR OUR CONTRACTORS

TRIDENT HOUSE,
38/44 VICTORIA ROAD, FARNBOROUGH,
HANTS, GU14 7UD. Tel: 0252 516141

ELMDON HOUSE,
2291 COVENTRY ROAD, SHELDON,
BIRMINGHAM B26 3PS
Tel: 021-742 4431

Licensed by the D.O.E. as an Employment Agency & Employment Business SE(B)1480

SMR

Sales & Marketing Recruiters Ltd
A Sales and Marketing Services Company

SALES EXECUTIVES WATCH OUT - HERE COMES THE FUTURE!

Whether or not you are currently considering a change of employment, you ought to be asking yourself if your company has the necessary resources to assure its own survival as well as your career development in this industry of technological leap-frog. Does it have:

- ★ A comprehensive range of computer systems?
- ★ Extensive research and development resources?
- ★ International coverage?
- ★ Recent new product announcements?
- ★ Complete in-house training facilities?
- ★ Industrial and commercial applications packages?
- ★ Large user base?
- ★ Good prospects for advancement into management?

If so, you may already be employed by our client. If not, here's your chance to advance into a company with real opportunities for personal development. All you need is a proven ability to:

- ★ Negotiate at board and shopfloor levels.
- ★ Sell computer related systems in a creative manner.
- ★ Produce an effective selling strategy.
- ★ Develop new and established accounts.
- ★ Qualify sales prospects perceptively.
- ★ Consistently achieve sales objectives.
- ★ Co-ordinate and motivate a sales team.
- ★ Handle a wide range of computer applications.

Vacancies currently exist in:

MANCHESTER LEEDS BIRMINGHAM LONDON

and successful candidates can expect a remuneration package which includes a company car, pension fund and health insurance, as well as on-call earnings of

£25,000

Please supply complete career details to Alasdair Scott in London, or Roger Dodd in Lichfield, quoting reference SSA/073.

LONDON & SOUTH

29 Oxford Street,
London W1. (01) 734 9776

Answering Service after 6 pm and weekends
SALES TRAINING, MARKET RESEARCH, RECRUITMENT

MIDLANDS & NORTH

Cathedral House, Beacon Street,
Lichfield, Staffs. (0542) 56612

Answering Service after 6 pm and weekends
SALES TRAINING, MARKET RESEARCH, RECRUITMENT

COMPUTER PROGRAMMER

An opportunity exists for an experienced RPG II programmer to become involved in the future development of data processing within the M.Y. Group of companies. We are currently operating two IBM System 34's which provide a service for many of the companies within the Group - three of which are on-line. Suitable candidates must be able to get on with people in a busy department. The successful applicant will be involved in many varied and challenging applications and be rewarded with an excellent salary reflecting the importance placed on this appointment.

MY

Please write or telephone:
Mark Paxton,
M.Y. Dist. Plc.,
Moxon Street,
Barnet, Herts. EN5 5TR.
Telephone: 01 440 8441

Ref. 140821

SUPERVISORS

In the following areas are required:

Electronics
Micro-computer, Office Technology
and Administrative/Stores
Salary: £7181-£7606

The Supervisor will be responsible for developing and implementing training programmes together with continuous assessment, supervision and control of training.

Candidates must have detailed knowledge in one or more of the key areas of training, together with the ability to easily relate and communicate with young people.

It is anticipated that these posts will provide permanent employment subject to receipt of annual grant aid from the M.S.C.

Knowledge of Welsh an advantage.

Relocation expenses in appropriate cases.

Application forms and further particulars from County Personnel Officer,

County Offices, Caernarfon, closing date 5 August, 1983.

HONEYWELL PROGRAMMER

for a

New DPS7 INSTALLATION

This is an interesting opportunity for an experienced Honeywell Programmer to join a small team developing a new database system.

You should have three years' experience on an L84 or DPS7 computer using COBOL and IDS II. Salary negotiable.

Write giving full details of qualifications and experience to:

Peter Barnes, Medical Insurance Agency Ltd., BMA House,
Tavistock Square, London WC1H 9JD.

Ref. 140821

SALES BIT

Getting to know Compec North's traits

IN CONTRAST to my experience of the Olympian Compec, I found the visit to its counterpart, Compec North, a pleasant one.

There was plenty of room to move around in an environment shirk-order warm, as Mid-Summer Day for once fulfilled its obligations. We were free of the oppressive clamour that greets the visitor to the jolly, bustling London event.

For those with childhood memories that still saw lazy lions and tired tigers roaming in the now neglected no-man's-land of Belle Vue, it was nostalgic return.

Through the broken netting and silent turnstiles, I could still hear the maddening moekeys and rowdy roundabouts of many years gone by; the illusion shattered by a tense technician, tired of trying to teach his tardy terminal to talk, staggering angrily to his electronic ambulance and dumping it disconsolately in the computer cluttered boot.

My main experience of the day occurred as I entered the exhibition. A glance into the hall established that there were not as many people as the big Compec draw, yet the queues at the registration points were several times longer than I have ever witnessed at Olympia.

There was a computer related check-in system, you see, and as any Luddite will tell you, that's where all the troubles begin.

Attendees were asked to enter complete personal details on a formal data-entry form. The allowance of only two lines for the complete postal address was unlikely to have had the blessing of the Post Office or of those asked to provide the data.

As we waited, there was time to observe that one terminal was already out of action and being attended by two exasperated engineers, whilst in the adjoining position a very slow typist tried desperately to make a reluctant plastic card fit into the embossing device.

At last my turn came about for the initiation ceremony. Unfortunately, but not unexpectedly, my approached and said: "Let me tell you about our financial planning services."

Positive and informative, that's the way you need to be at an exhibition. Don't wait for buyers to approach you. Ask questions that get people involved.

Eventually, the time came for teaing. It had been an enjoyable, even rewarding day, but one thing fell short of Olympia - I didn't meet even 10% of the friends and acquaintances I would normally expect to see at Compec. Whether that was a function of numbers or the youth of most of the exhibiting companies is a matter for speculation.

"For what?" I asked.

"For anything you want to know," answered the typist.

I never did find out what to do with my enquiry card.

I completed my initial tour, having absorbed as much of the exhibition as I thought was relevant, and settled down with a plastic pint of fizzy shandy to consider what I had seen. If you took away the micro-computer suppliers, communications, peripherals and consumables, there wasn't much left. No sign of the major league, other than Digital Equipment.

It was all about the new, the small, the entrepreneurial and the "let's hope we'll still be in business next year" companies. It was interesting, exciting and left one wondering how the cost/performance of computing could actually go.

It all continued to be amazing, stimulating and impressive, until I simply enquired about my business accounting needs.

In the recent past, a popular reaction to the "I've got an applications problem" was the "hardware hype". The salesman went into an enthusiastic dissertation about hardware performances and language processors.

This has been replaced by the "package panacea". It appears that everybody has a package for every business need. "You have a sales ledger requirement, we have a sales ledger package - therefore we must be able to solve your problem - and don't confuse me with any details!"

Really, this is almost as far removed from gaining the client's confidence and developing product credibility, as the heavy hardware approach.

Positive and informative, that's the way you need to be at an exhibition. Don't wait for buyers to approach you

transactions I envisaged, what budget I had available, what management information I required, and so on.

In other words, the salesmen concerned were either too inexperienced to understand, or too carried away with the superlatives of their solution to ask me what my problem was.

However, criticism cannot be addressed to every exhibitor. There was, for instance, a supplier of financial planning and management control systems with a very clear display of its applications and industrial capabilities.

The one and only microcomputer on its stand was undoubtedly neither a decoration nor a solution in itself and, even better, its saleswoman didn't ask me if she could help, thus avoiding the obvious response "No" but approached and said: "Let me tell you about our financial planning services."

Positive and informative, that's the way you need to be at an exhibition. Don't wait for buyers to approach you. Ask questions that get people involved.

Eventually, the time came for teaing. It had been an enjoyable, even rewarding day, but one thing fell short of Olympia - I didn't meet even 10% of the friends and acquaintances I would normally expect to see at Compec. Whether that was a function of numbers or the youth of most of the exhibiting companies is a matter for speculation.

"For what?" I asked.

"For anything you want to know," answered the typist.

I never did find out what to do with my enquiry card.

I completed my initial tour, having absorbed as much of the exhibition as I thought was relevant, and settled down with a plastic pint of fizzy shandy to consider what I had seen. If you took away the micro-computer suppliers, communications, peripherals and consumables, there wasn't much left. No sign of the major league, other than Digital Equipment.

It was all about the new, the small, the entrepreneurial and the "let's hope we'll still be in business next year" companies. It was interesting, exciting and left one wondering how the cost/performance of computing could actually go.

It all continued to be amazing, stimulating and impressive, until I simply enquired about my business accounting needs.

PUZZLE ANSWER

